

FINAL REPORT: PHASE 2
EVALUATION OF THE EFFICIENCY
VERMONT RESIDENTIAL
PROGRAMS
APPENDICES

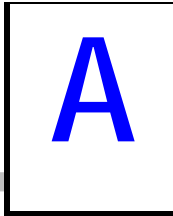
Prepared for

Vermont Department of Public Service
Montpelier, Vermont

Prepared by

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December 2005



QUESTIONNAIRES

A.1 RASS TELEPHONE SURVEY

VERMONT Residential Appliance Saturation Study FINAL (includes BED items)

Introduction:

Hello. This is _____ calling from Research America on behalf of the Vermont Department of Public Service. We're conducting research on home energy usage in order to help plan for the future energy needs of Vermont residents. This is important research and we would appreciate your participation. I want to assure you that this is not a sales call and that the information you provide will be kept strictly confidential.

May I please speak to one of the heads of your household?

[REPEAT INTRO AS NEEDED, CONTINUE, OR ARRANGE FOR CALLBACK]

[IF NECESSARY: This survey will take about 15 minutes, depending on your responses]

X1. I'd first like to confirm, is a residence or a business?

1. Residence
2. Both residence and business
3. Business only → Thank & Terminate
8. (DK/RF) → Thank & Terminate

ASK in Chittenden County only:

X2. Do you receive an electric bill for your household from Burlington Electric Department?

1. Yes
2. No
8. (DK/RF)

Housing Characteristics

I'd like to start by ask you some questions about the type of house or building you live in.

Q1. Which of the following best describes you home? Is it a

1. Manufactured or mobile home
2. Single family home not attached to any others
3. Duplex or triplex
4. An apartment, condominium or townhouse in a building with 4 or fewer units
5. An apartment, condominium or townhouse in a building with 5 or more units → Thank & Terminate CONTINUE IF BED CUSTOMER
7. Other [Specify _____] → Thank & Terminate CONTINUE IF BED CUSTOMER
8. (DK/RF)

Q2. How many stories or levels does your entire building have? (If Q1=3 or 4: "Count the number of stories in the whole building.") Do not include parking levels or unfinished basements.

1. 1 story / level
2. 2 stories / levels
3. 3 or more stories / levels
7. (Other Specify _____)
8. (DK/RF)

Q3. Is your home occupied year round, or is it a seasonal home?

1. Year round residence
2. Seasonal / vacation home
7. (Other Specify _____)
8. (DK/RF)

Q4. Do you own or rent your home?

1. Own
2. Rent
7. (Other)
8. (DK/RF)

Q5. Approximately what year was this home/building built? (If don't know, Probe for best guess.)

1. Before 1930
2. 1930 to 1939
3. 1940 to 1949
4. 1950 to 1959
5. 1960 to 1969
6. 1970 to 1979

7. 1980 to 1989
8. 1990 to 1994
9. 1995 to 1999
10. 2000 to 2005
88. (DK/REF)

Q6. How many rooms are in your home? Do **not** count bathrooms, halls, garages, porches or unfinished rooms. _____ [88=DK]

Q7. How many bedrooms are in your home? _____
[88=DK; Enter zero for a studio apartment with no bedrooms]

Q8. What is the approximate square footage of the living space of your home? (Do **not** include unheated garage, attic, or basement space.) Is it: [Probe for best estimate]

1. Less than 800 square feet
2. 800 to 1,199 square feet
3. 1,200 – 1,599
4. 1,600 – 1,999
5. 2,000 – 2,499
6. 2,500 – 2,999
7. Over 3,000 square feet
8. (DK/REF)

SPACE HEATING

H1. **[IF RENT Q4=2]** Who is responsible for paying to heat your home?

1. Respondent pays
2. Property Owner / Landlord
3. (Respondent pays for some heating (i.e. portable heaters) and owner/ landlord pays for some)
4. (No heating system at this home) → **Go to C1 - Cooling**
8. (DK/REF) → **Go to C1 - Cooling**

H2. Which fuel supplies most of the heating for your home?

1. Fuel Oil heating → **Go to H3**
2. Kerosene → **Go to H4**
3. Natural Gas from underground pipes → **Go to H5**
4. Propane, Bottled or tank gas → **Go to H6**
5. Electric Heating → **Go to H7**
6. Wood pellets → **Go to H8**
7. Wood → **Go to H8**
8. Coal → **Go to H9**

- 9. Solar → Go to H9
- 77. Or something else (Specify_____) → Go to H9
- 78. (NO heating fuel) → Go to C1
- 88. (DK/REF) → Go to H9

H3. **[Oil Heating]** What type of system provides most of the *fuel oil* heating for your home?
[READ LIST]

- 1. Central forced air furnace
- 2. Hot water or steam boiler (upright radiators or baseboards)
- 77. (Other Oil System)_____
- 88. (Don't know type-oil)

→ Go to H10

H4. **[Kerosene Heat]** What type of system provides most of the *kerosene* heating for your home? [READ LIST]

- 1. Central forced air furnace
- 2. Hot water or steam boiler (upright radiators or baseboards)
- 3. Direct Vent Space heaters
- 4. Un-vented space heaters
- 5. Portable heaters
- 77. (Other Kerosene System)_____
- 88. (Don't know type-Kerosene)

→ Go to H10

H5. **[Natural Gas Heating]** What type of system provides most of the *natural gas* heating for your home? [READ LIST]

- 1. Central forced air furnace
- 2. Hot water or steam boiler (upright radiators or baseboards)
- 3. Direct Vent Space heaters
- 4. Un-vented Space heaters
- 5. Fireplace Inserts
- 6. Stoves
- 77. (Other Natural Gas System)_____
- 88. (Don't know type-natural gas)

→ Go to H10

H6. **[Bottled Gas Heat]** What type of system provides most of the *bottled gas* heating for your home? [READ LIST]

- 1. Central forced air furnace
- 2. Hot water or steam boiler (upright radiators or baseboards)
- 3. Direct Vent Space heaters
- 4. Un-vented space heaters
- 5. Portable heaters

- 6. Fireplace Inserts
- 7. Stoves
- 77. (Other Bottled Gas System)_____
- 88. (Don't know type-bottled gas)

→ Go to H10

H7. **[Electric Heating]** What type of system provides most of the *electric* heating for your home? [READ LIST]

- 1. Baseboard, wall heaters without fans, or ceiling cables
- 2. Wall heaters with fans
- 3. Central forced air furnace
- 4. Heat pump
- 5. Storage Heater Units
- 6. Portable heaters
- 77. (Other electric system)_____
- 88. (Don't know type-electric)

→ Go to H10

H8. **[Wood]** What type of system provides most of the *wood* heating for your home? [READ LIST]

- 1. Pellet stove
- 2. Wood stove
- 3. Fireplace insert that uses wood
- 4. Wood fireplace
- 5. Central forced air furnace
- 6. Hot water or steam boiler
- 77. (Other Wood System)_____
- 88. (Don't know type-bottled gas)

→ Go to H10

H9. **[Other fuels]** What type of heating system provides most of the heating for your home_____ [OPEN]

- 77. (Other System)_____
- 88. (Don't know type - other)

→ Go to H10

H10. How often do you have your heating system serviced by a professional? Would you say...

- 1. Once a year
- 2. Once every other year, or
- 3. Less often than every other year?
- 4. (Never had/have it serviced)
- 5. (Not Applicable)
- 8. (DK/REF)

H11. How old is your primary heating system?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old → Go to H12
4. 10 to 14 years old → Go to H12
5. 15 to 19 years old → Go to H12
6. 20 years or older → Go to H12
8. (DK/REF) → Go to H12

[Ask H11A ONLY if Heating System is a Natural Gas or Fuel Oil Furnace or Boiler (H3=1,2 or H5=1,2) AND system is 0 to 4 years old (H11=1,2) ELSE Go to H12]

H11A. Were you involved in deciding which model furnace or boiler to purchase?

1. Yes
2. No → Go to H12
6. (Contractor made decision) → Go to H12
7. (Did Not purchase furnace or boiler) → Go to H12
8. (DK/REF) → Go to H12

H11B. Did your contractor offer you the opportunity to purchase an ENERGY STAR[®] high efficiency unit?

1. Yes
2. No
8. (DK/REF)

H11C. Did you purchase an ENERGY STAR[®] unit?

1. Yes → Go to H11E
2. No
8. (DK/REF) → Go to H12

H11D. [If no] Why not? (OPEN)_____

H11E. What was the main reason you purchased an ENERGY STAR[®] unit? (OPEN) _____

H12. What type of temperature control is on your primary heating system?

1. Regular thermostat(s) with temperature settings
2. Clock or programmable thermostat(s)
3. Dial control without temperature settings
4. Simple on/off switch or no temperature control
5. Electric heat seasonal control panel
8. (DK/REF)

H13. Do you use any of the following for supplemental heating? 1. Yes 2. No 8. (DK)

- A. Electric baseboard, wall units, or radiant ceiling panels
- B. Portable electric heater or Quartz heater
- C. Kerosene heater
- D. Portable gas heater
- E. Fixed gas space heater, freestanding stove
- F. Gas fireplace insert
- G. Wood burning fireplace
- H. Wood or coal stove

[ASK H14 & H15 IF AT LEAST ONE “YES” TO H13, ELSE GO TO C1]

H14. Approximately how often do you use your non-primary heating system during the heating season?

- 1. Every day
- 2. 3 - 5 days per week
- 3. 1 - 2 days per week
- 4. Only a few days a year
- 8. (DK/REF)

H15. How many rooms are heated by your non-primary heating systems? _____

(Do **not** count hallways)

COOLING

C1. Do you have a central air conditioning system in your home? Do not include room air conditioners or fans.

- 1. Yes
- 2. No → Go to C5
- 8. (DK/REF) → Go to C5

C2. **[Ask If Q1 = 3 or 4 or 5 (a multi-unit building)]** Does your central air conditioning system serve your home only or more than one home or apartment?:

- 1. serves respondent's home only
- 2. serves more than one home or apartment → Go to C5
- 8. (DK/REF)

C3. How old is your central air conditioning system?

- 1. Less than one year old
- 2. 1 to 4 years old
- 3. 5 to 9 years old → Go to C4

4. 10 to 14 years old → Go to C4
5. 15 to 19 years old → Go to C4
6. 20 years or older → Go to C4
8. (DK/REF) → Go to C4

C3A. Were you involved in deciding which central air conditioning system to purchase?

1. Yes
2. No → Go to C4
6. (Contractor made decision) → Go to C4
7. (Did Not purchase Central Air System) → Go to C4
8. (DK/REF) → Go to C4

C3B. Did your contractor offer you the opportunity to purchase an ENERGY STAR[®] high efficiency central air conditioning system?

1. Yes
2. No
8. (DK/REF)

C3C. Did you purchase an ENERGY STAR[®] system?

1. Yes → Go to C3E
2. No
8. (DK/REF) → Go to C4

C3D. [If no] Why not? (OPEN)_____

C3E. What was the main reason you purchased an ENERGY STAR[®] unit? (OPEN) _____

C4. What type of temperature control is on your central air conditioner?

1. Regular thermostat(s) with temperature settings
2. Clock or programmable thermostat(s)
3. Dial control without temperature settings
4. Simple on/off switch or no temperature control
7. Other (Specify_____)
8. (DK/REF)

C5. How many room air conditioners do you **use** in your home ?

1. None → Go to W1
2. One
3. Two
4. Three or more
8. (DK/REF) → Go to W1

C6. How old is your ("most used" if >1) room air conditioner?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old
4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

WATER HEATING

W1. **[Ask If Q1 = 3 or 4 or 5 (a multi-unit building)]** Does your water heating system serve only your home or does it serve more than one home or apartment?

1. Water heater(s) serves only this home or apartment
2. Water heater(s) serves more than one home or apartment
7. (This home has NO hot water)
8. (DK/REF)

➔ Go to W3

➔ Go to RF1

➔ Go to RF1

W2. How many water heaters are in your home?

1. One
2. Two
3. Three or more
8. (DK/REF)

W3. What type of energy is used to operate your ("primary" if >1) water heater?

1. Electricity
2. Natural gas
3. Oil
4. Bottled gas (LP, propane, butane)
5. Kerosene
6. Wood
7. Solar
77. Other (Specify_____)
88. (DK/REF)

If W1=2 THEN GO TO W7

W4. How large is your ("primary" if >1) water heater/hot water tank?

1. Small (30 gallons or less)
2. Medium (31 to 49 gallons)
3. Large (50 gallons or more)

- 4. Tankless / Instantaneous system
- 7. Other (Specify_____)
- 8. (DK/REF)

W5. **[ASK ONLY IF BOILER FOR HEATING (H3=2 or H4=2 or H5=2 or H6=2 or H8=6)]**

Is your water heater heated by your boiler or is it a stand-alone unit?

- 1. Heated by boiler
- 2. Separate, stand alone unit
- 8. (DK/REF)

If W4=4 THEN GO TO W7

W6. Does your ("primary" if >1) hot water heater have an insulation blanket?

- 3. Yes
- 4. No
- 8. (DK/REF)

W7. Do you have low -flow shower heads installed in any of your showers?

- 1. Yes
- 2. No → **Go to RF1**
- 3. (Does not have a shower) → **Go to RF1**
- 8. (DK/REF) → **Go to RF1**

W8. Are they in all of your showers or just some of your showers?

- 1. All showers
- 2. Some showers
- 8. (DK/REF)

REFRIGERATORS

RF1. How many refrigerators do you have in your home?

- 1. One
- 2. Two
- 3. Three or more
- 4. (None) → **Go to RF14 - Freezers**
- 8. (DK/REF) → **Go to RF14 - Freezers**

[IF MORE >1 REFRIGERATOR] READ: "I WOULD FIRST LIKE TO ASK YOU ABOUT THE REFRIGERATOR YOU USE THE MOST"]

RF2. What size, in cubic feet, best describes this refrigerator?

1. Mini: (less than 10 cubic feet)
2. Small: (10 to 14 cubic feet)
3. Medium: (15 to 20 cubic feet)
4. Large: (more than 20 cubic feet)
- 8.(DK/REF)

RF2A. What style best describes this refrigerator?

1. A Single door with the freezer inside
2. 2 Side by side doors
3. A top freezer
4. A bottom freezer
7. (OTHER_____)

8.(DK/REF)

RF3. What type of defrost does this refrigerator have?

1. Automatic / Frost-free
2. Manual
3. (none / no freezer)
8. (DK/REF)

RF4. Does it have a through the door ice and water dispenser?

1. Yes
2. No
8. (DK/REF)

RF5. How old is this refrigerator?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old
4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

[IF ONLY ONE REFRIGERATOR → [Go to RF14 - Freezers](#)]

[IF TWO, READ: "I WOULD NOW LIKE TO ASK YOU ABOUT YOUR OTHER REFRIGERATOR"]

[IF more than two READ: "I WOULD NOW LIKE TO ASK YOU ABOUT YOUR SECOND MOST USED REFRIGERATOR"]

[Second Refrigerator]

RF6. Is your second refrigerator plugged in...

1. All of the time → [Go to RF7](#)
2. Sometimes → [Go to RF6A](#)
3. Never → [Go to RF7](#)
8. (DK/REF) → [Go to RF7](#)

RF6A. About how much of the time is this refrigerator plugged in and running?

1. All of the time (12 months a year)
2. Less than one month a year
3. 1 to 3 months a year
4. 4 to 6 months a year
5. 7 to 9 months a year
6. 10 to 11 months a year?
7. (OTHER____)
8. (DK/REF)

RF7. What size, in cubic feet, best describes this refrigerator?

1. Mini: (less than 10 cubic feet)
2. Small: (10 to 14 cubic feet)
3. Medium: (15 to 20 cubic feet)
4. Large: (more than 20 cubic feet)
8. (DK/REF)

RF7A. What style best describes this refrigerator?

1. A Single door with the freezer inside
2. 2 Side by side doors
3. A top freezer
4. A bottom freezer
7. (OTHER____)
8. (DK/REF)

RF8. What type of defrost does this refrigerator have?

1. Automatic / Frost-free
2. Manual
3. (none/no freezer)
8. (DK/REF)

RF9. How old is this refrigerator?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old
4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

[IF ONLY TWO REFRIGERATORS → [Go to RF14 – Freezers](#)]

[Third Refrigerator]

RF10. Is your third refrigerator plugged in...

1. All of the time → [Go to RF11](#)
2. Sometimes → [Go to RF10A](#)
3. Never → [Go to RF11](#)
8. (DK/REF) → [Go to RF11](#)

RF10A. About how much of the time is this refrigerator plugged in and running?

1. All of the time (12 months a year)
2. Less than one month a year
3. 1 to 3 months a year
4. 4 to 6 months a year
5. 7 to 9 months a year
6. 10 to 11 months a year?
7. (OTHER_____)
8. DK/REF

RF11. What size, in cubic feet, best describes this refrigerator?

1. Mini: (less than 10 cubic feet)
2. Small: (10 to 14 cubic feet)
3. Medium: (15 to 20 cubic feet)
4. Large: (more than 20 cubic feet)
8. (DK/REF)

RF11A. What style best describes this refrigerator?

1. A Single door with the freezer inside
2. 2 Side by side doors
3. A top freezer
4. A bottom freezer
7. (OTHER_____)
8. (DK/REF)

RF12. What type of defrost does this refrigerator have?

1. Automatic / Frost-free
2. Manual
3. (none/no freezer)
8. (DK/REF)

RF13. How old is this refrigerator?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old
4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

Freezers

RF14. How many “stand-alone” freezers do you have in your home? Do not count freezers that are part of a refrigerator.

1. None → [Go to RF23 \(removal\)](#)
2. One
3. Two or more
8. (DK/REF) → [Go to RF23 \(removal\)](#)

[IF MORE >1 STAND ALONE FREEZER] READ: “I WOULD LIKE TO ASK YOU ABOUT STAND-ALONE FREEZER YOU USE THE MOST”]

RF15. Is this stand-alone freezer plugged in...

1. All of the time
2. Sometimes
3. Never
8. (DK/REF)

RF16. What style best describes this freezer?

1. Upright, frost-free
2. Upright, manual defrost
3. Chest, frost-free
4. Chest, manual defrost
8. (DK/REF)

RF17. What size, in cubic feet, best describes this freezer?

1. Small: (less than 15 cubic feet)

2. Medium: (15-20 cubic feet)
3. Large: (more than 20 feet)
8. (DK/REF)

RF18. How old is this freezer?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old
4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

[IF ONLY ONE FREEZER → [Go to RF23 - \(removal\)](#)]

[IF two or more] READ: "I WOULD NOW LIKE TO ASK YOU ABOUT YOUR SECOND FREEZER"]

[Second Freezer]

RF19. Is this stand-alone freezer plugged in...

1. All of the time
2. Sometimes
3. Never
8. (DK/REF)

RF20. What style best describes this freezer?

1. Upright, frost-free
2. Upright, manual defrost
3. Chest, frost-free
4. Chest, manual defrost
8. (DK/REF)

RF21. What size, in cubic feet, best describes this freezer?

1. Small: (less than 15 cubic feet)
2. Medium: (15-20 cubic feet)
3. Large: (more than 20 cubic feet)
8. (DK/REF)

RF22. How old is this freezer?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old

4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

Removal & Disposal

RF23. Have you removed a refrigerator or freezer from your home in the past three years?

1. Yes
2. No → Go to F1
8. (DK/REF) → Go to F1

RF24. How many have you removed from your home?

1. One
2. Two
3. Three or more
8. (DK/REF)

RF25. a. How did you dispose of the ["first" (if more than one)] refrigerator or freezer? Was it:
b. How did you dispose of the ["second" (if 2 or more)] refrigerator or freezer? Was it:
c. How did you dispose of the ["third" (if 3 or more)] refrigerator or freezer? Was it:

1. Removed by an appliance dealer when a new one was delivered
2. Removed by a private hauler
3. Removed by the refuse service
4. Given or sold privately to another individual or organization
5. Sold to a second-hand appliance dealer
6. (Other)_____
8. (DK/REF)

Food Preparation

F1. What fuel does your oven use?

1. Electric
2. Natural Gas
3. Propane - Bottled gas
4. (Wood)
5. (Other_____)
6. (NO OVEN)
8. (DK/REF)

F2. What fuel does your cook-top or burners use?

1. Electric

2. Natural Gas
3. Propane - Bottled gas
4. (Wood)
5. (Other_____)
6. (NO BURNERS/COOKTOP)
8. (DK/REF)

F3. Do you use a dishwasher?

1. Yes
2. No → **Go to F5**
8. (DK/REF) → **Go to F5**

F4. How old is your dishwasher?

1. Less than one year old
2. 1 to 4 years old
3. 5 to 9 years old
4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

F5. Do you use a microwave oven?

1. Yes
2. No
8. (DK/REF)

Laundry

L1. Is there a clothes washer in your home?

1. Yes, it is for the private use of this home
2. Yes, but it is in a common area for use by more than one home or apt. → **Go to L4**
3. No → **Go to L4**
8. (DK/REF) → **Go to L4**

L2. Is your clothes washer a top loading machine or is it a front loading machine?

1. Top loading
2. Front loading
8. (DK/REF)

L3. How old is your clothes washer?

1. Less than one year old
2. 1 to 4 years old

3. 5 to 9 years old
4. 10 to 14 years old
5. 15 to 19 years old
6. 20 years or older
8. (DK/REF)

L4. Do you have a clothes dryer in your home?

1. Yes, it is for the private use of this home
2. Yes, but it is in a common area and can be used by more than one home → Go to A1
3. No → Go to A1
8. (DK/REF) → Go to A1

L5. What fuel does your clothes dryer use?

1. Electric
2. Natural Gas
3. Bottled gas (propane, butane, LP)
8. (DK/REF)

Appliances

A1. How many of the following appliances and equipment are used in your home?

0. none 1. one 2. two 3. three or more 8. (DK/REF)

Entertainment Media Equipment

- a. Large Screen Television than is greater than 36 inches
- b. Standard size TV (36 inches or less)
- c. Video cassette recorder (VCR)
- d. Digital video disk player (DVD)
- e. Stereo system
- f. Video Game player
- g. Personal video recorders, such as TiVo (pronounced Tee-Vo)
- h. Video equipment
- i. Digital satellite box
- j. Analog or digital cable TV

Other Indoor Equipment

- k. Humidifier
- l. Dehumidifier
- m. Air filter or air cleaner
- n. Whirlpool bathtub
- o. Heat pump water heater
- p. Instant hot water dispenser
- q. Heated waterbed
- r. Aquarium with a pump
- s. Cordless telephones - not a cell phone

Fans

- t. Attic or whole house fans
- u. Ceiling or paddle fans
- v. Portable or window fans
- w. Bathroom fans
- x. Kitchen range vent fans
- y. Radon mitigation fans or pumps

Outdoor Equipment

- z. Electric pump for Well water

Other

- aa. Backup portable generator
- bb. Portable appliances or tools, such as hand-held vacuum cleaners or power drills, that are powered by a rechargeable battery
- cc. Do you have an outdoor swimming pool? 1. Yes 2. No 8. (DK)
- dd. [ASK if has pool] Is it heated? 1. Yes 2. No 8. (DK)
- ee. Do you have a sauna? 1. Yes 2. No 8. (DK)
- ff. [ASK If has sauna] Is it heated with electricity, gas or wood?
 - 1. Electric
 - 2. Gas
 - 3. Wood
 - 4. (Other)
 - 8. (DK/REF)
- gg. Do you have a hot tub or spa? 1. Yes 2. No 8. (DK)
- hh. [ASK if has hot tub] Is it heated with electricity, gas or wood?
 - 1. Electric
 - 2. Gas
 - 3. Wood
 - 4. (Other)
 - 8. (DK/REF)

Computer and Home Office Equipment

A2. Does anyone in your household operate a business and/or work out of your home?

- 1. Yes
- 2. No → **Go to A4**
- 8. (DK/REF) → **Go to A4**

A3. How many hours per week is someone working out of your home?

- 1. 10 hours or less per week
- 2. 11 to 30 hours per week
- 3. More than 30 hours per week
- 8. (DK/REF)

A4. How many personal computers are used in your home?

0. none 1. one 2. two 3. three or more 8. (DK/REF)
- A5. [ASK if has PC] Do you have an Internet connection at home? 1. Yes 2. No 8. (DK)
- A6. [ASK if has Internet] Is your connection...
1. Dial-up
 2. Cable modem or high speed phone line (DSL)
 3. Web TV terminal (Internet access through your TV)
 7. (Other _____)
 8. (DK/REF)
- A7. How many of the following are used in your home?
0. none 1. one 2. two 3. three or more 8. (DK/REF)
- a. multi-function machines which have a printer, as well as a fax, scanner, or photo-copier?
 - b. separate fax machines
 - c. separate scanners
 - d. separate photo copiers
 - e. separate printers
- A8. Is there any other large equipment that uses electricity in this home? For example: welding equipment, electric farm equipment, electric kiln, or engine block heaters. (SPECIFY. _____)

Energy Star and EVT Awareness

S1 Have you ever heard of or seen the **ENERGY STAR**[®] label?

1. Yes
2. No ➔ **Go to E1**
8. (DK/REF) ➔ **Go to E1**

**ASK S2 IF RF5 = 1 or 2; RF18 = 1 or 2; L3 = 1 or 2; F4= 1 or 2; C6 = 1 or 2
ELSE ➔ Go to E1**

S2 Do any of the appliances you purchased recently have the **ENERGY STAR**[®] label?

1. Yes
2. No ➔ **Go to E1**
8. (DK/REF) ➔ **Go to E1**

S3 On a scale of 1 to 5, where 5 is 'important' and 1 is 'not at all important', how important was the **ENERGY STAR**[®] label in your decision to buy the particular model you did?

1. 2. 3. 4. 5. 8. (DK/REF)

E1. Have you ever heard of an organization called “*Efficiency Vermont*”?

- 1. Yes
- 2. No → Go to BED1
- 8. (DK/REF) → Go to BED1

E2. Can you tell me what “*Efficiency Vermont*” does? OPEN_____

8. (DK/REF)

E3. Have you received a rebate from “*Efficiency Vermont*” for the purchase of an energy-efficient appliance?

- 1. Yes → Go to E3A
- 2. No → Go to E4
- 8. (DK/REF) → Go to E4

E3A On a scale of 1 to 5, where 5 is ‘important’ and 1 is ‘not at all important’, how important was the rebate in your decision to buy the particular model you did?

1. 2. 3. 4. 5. 8. (DK/REF)

E4. Have you used any other services from “*Efficiency Vermont*”?

- 1. Yes
- 2. No → Go to BED1
- 8. (DK/REF) → Go to BED1

E5. What services were they? OPEN_____

8. (DK/REF)

BED ONLY:

BED1. Have you received a rebate from Burlington Electric Department for the purchase of an Energy Efficient appliance?

- 1. Yes → Go to E6
- 2. No
- 8. (DK/REF)

BED2. Did you know that Burlington Electric Department offers rebates on the purchase of certain Energy Efficient appliances?

- 1. Yes
- 2. No
- 8. (DK/REF)

LIGHTING

E6. Have you ever heard of a compact fluorescent light bulb, sometimes referred to as a C-F-L bulb?

- 1. Yes → Go to E8
- 2. No
- 8. (DK/REF)

E7. Well, compact fluorescent light bulbs are small fluorescent bulbs that fit into regular light bulb sockets. They look different from standard bulbs and are often made out of thin tubes of glass bent into loops. Does this sound like something you are familiar with?

- 1. Yes
- 2. No → Go to E13
- 8. (DK/REF) → Go to E13

E8. Do you currently have any installed in your home?

- 1. Yes
- 2. No → Go to E10
- 8. (DK/REF) → Go to E10

E9. How many are currently installed ?

Enter # _____ [PROBE FOR BEST ESTIMATE]
88 (DK/REF)

E10. Have you purchased a compact fluorescent bulb in the past two years?

- 1. Yes
- 2. No → Go to E13
- 8. (DK/REF) → Go to E13

E11. Did you receive a rebate for any of those purchases?

- 1. Yes
- 2. No → Go to E13
- 8. (DK/REF) → Go to E13

E12. Would you still have purchased the compact florescent bulbs if no rebate had been offered?

- 1. Yes
- 2. No
- 8. (DK/REF)

E13. Did you know that that “*Efficiency Vermont*” offers instant store rebates on the purchase of certain energy efficient light bulbs and lighting fixtures?

1. Yes
2. No
8. (DK/REF)

BED ONLY:

BED3. Did you know that Burlington Electric Department offers instant store rebates on the purchase of certain energy efficient light bulbs and lighting fixtures?

1. Yes
2. No
8. (DK/REF)

INTEREST IN EVT HOME STUDY

E14. [ASK If Q4=1 OWNERS only] “*Efficiency Vermont*” **and Burlington Electric Department** offers a service to help homeowners reduce heating and hot water costs. The service provides homeowners with an analysis of energy savings opportunities based on a detailed study of your home. The homeowner pays \$75 for the study, but is eligible for financial incentives and five percent financing for the recommended improvements. How interested would you be in participating in this program? Would you say...

1. Very interested
2. Somewhat interested
3. Not very interested
4. Not at all interested
8. (DK/REF)

The Household

These final few questions are for statistical purposes only and will allow us to compare energy usage between various groups.

D1. How many people, including yourself, live in your home? _____ [DK=88 REF=99]

D2. [ASK IF D1>1] How many are 6 years of age or younger? _____ [DK=88 REF=99]

D3. How many are 65 or older? _____ [DK=88 REF=99]

D4. What was the highest level of education completed by any head of household in your home?

1. 8th grade or less
2. Some high school
3. High school graduate (or GED)
4. Some college, trade or technical school
5. 4 year college graduate
6. Post graduate degree
88. (DK)
99. (REF)

D5. Lastly, please stop me when I come to the category that includes your total household income before taxes in 2004.

1. Less than \$15,000
2. \$15,000 to \$24,999
3. \$25,000 to \$34,999
4. \$35,000 to \$49,999
5. \$50,000 to \$74,999
6. \$75,000 to \$99,999
7. \$100,000 to \$149,999
8. \$150,000 or more
88. (DK)
99. (REF)

On-site Recruitment

OR1. Finally, as part of this energy efficiency evaluation for the Vermont Department of Public Service, we are conducting a number of on-site visits to homes such as yours to make note of specific features of appliances and home lighting products found in Vermont Homes. This data is very helpful for planning for the state's future energy needs. This on-site survey would be conducted at your convenience and would take about one hour. As compensation for your participation in this important research, we will pay you \$35.

Do you think you might be interested in participating?

- 1 Yes
- 2 No → **[Thank and Terminate]**

[If Asked: You would be visited by a contracted home interviewer working on behalf of the State of Vermont.]

OR2. **[IF OR1=1]** Great! You will be contacted by a home survey specialist to schedule an appointment. I'll just need to get a little information:

Name * _____
Telephone *CONFIRM _____
Address: _____
Best time to Call _____

Thank you very much for your participation in this survey

[SURVEY IS FINISHED]

A.2 BUILDER QUESTIONNAIRE

**VERMONT ENERGY STAR HOMES PROGRAM EVALUATION
BUILDER QUESTIONNAIRE –REVISED 03/28/05**

Contact Name: [from sample]
 Company: [from sample]
 Address: [from sample]
 City, State, Zip [from sample]
 Telephone: [from sample]
 Market Area/Size Category: [from sample]
 Survey ID Number: _____

LEAD-IN: Hello, my name is _____ and I am calling from _____. We are conducting a survey of Vermont homebuilders as part of an evaluation of the Vermont Energy Star Homes Program. We are conducting this evaluation on behalf of the Vermont Department of Public Service. May I speak with the person who is most responsible for decisions concerning the design and specification of the homes your company builds?

NAME OF CONTACT: _____

IF CONTACT IS NOT AVAILABLE, ASK FOR BEST TIME TO CALL BACK.

CALL BACK DATE/TIME: _____

REPEAT LEAD-IN FOR RESPONDENT IF NEEDED. We would like to interview you about your recent experience and views on energy efficiency in new home construction. The interview will take about fifteen minutes.

SC 1. Did you build any new housing units in Vermont in 2004?

No	0
Yes	1
Don't know	97
Refused	98

IF SC 1 = 0, THANK AND TERMINATE

Lead in: Great, we can proceed. In appreciation of your time, your name will be entered into a drawing to win a one thousand dollar gift certificate to a building supply retailer. All responses you provide will be confidential.

ESTABLISHMENT DATA

We'd like to begin by asking you a few general questions about your company.

E.1 Does your company provide services in states other than Vermont?

No **SKIP TO E.2**..... 0
 Yes 1
 Don't know **SKIP TO E.2** 97
 Refused **SKIP TO E.2**..... 98

E.1.a **IF E.1 = 1, ASK:** In which other states does your company provide services?

New Hampshire 1
 New York..... 2
 Maine 3
 Massachusetts 4
 Other 99

E.1.b Approximately what percentage of your company's total 2004 revenues came from Vermont projects?

ENTER PERCENTAGE.....
[997 FOR DK, 998 FOR REFUSED]

E.2 Which of the following services does your company provide? CODE 1 = YES; 2 = NO; 3 = DK.

E.2a **ASK FOR EACH SERVICE WHERE E2 = 1, ASK** Approximately what percentage of your company's 2004 revenues came from [SERVICE]? ENTER 997 FOR DK. %s SHOULD NOT EXCEED 100.

	Service	E2	E2a: Enter %
1	General contracting for residential new construction		
2	General contracting for commercial new construction		
3	General contracting for significant residential rehabilitation, renovation, or remodeling		
4	General contracting for significant commercial rehabilitation, renovation, or remodeling		
99	Any other service(s)		

E2a99_specify **IF E2a99 >0 ASK:** Which other service(s)?
[RECORD OPEN-ENDED RESPONSE]

E.3 Roughly how many new housing units did you build in Vermont in 2004?

ENTER NUMBER OF UNITS.....
[997 FOR DK, 998 FOR REFUSED]

What percentage of these new housing units were ...

E.3.a1. Single Family Homes..... _____
[ENTER PERCENTAGE; 997 FOR DK, 998 FOR REFUSED]

E.3.a 2. Two-Family Homes _____
[ENTER PERCENTAGE; 997 FOR DK, 998 FOR REFUSED].....

E.3.a 3. 3 to 4 Family Buildings _____
[ENTER PERCENTAGE; 997 FOR DK, 998 FOR REFUSED]

E.3.a 4. Apartment Or Condo Buildings With 5 Or More Units..... _____
[ENTER PERCENTAGE; 997 FOR DK, 998 FOR REFUSED]

E.3.b What percentage of these homes were built for year-round occupancy, as opposed to vacation homes or time-share condos?
ENTER PERCENTAGE YEAR ROUND..... _____
[997 FOR DK, 998 FOR REFUSED]

E.4 What percentage of your single-family homes (in Vermont) were custom-built, that is: built according to plans that were developed specifically or extensively modified to suit the owner?
ENTER PERCENT..... _____
[997 FOR DK, 998 FOR REFUSED]

E.4.a IF E.4 > 0: What was the typical selling price of custom homes you built in 2004?
ENTER AVERAGE PRICE \$ _____
[997 FOR DK, 998 FOR REFUSED]

IF E.4 < 100% ASK E.5. ELSE SKIP TO E.6.

E.5 What percentage of the homes you built in 2004 would you characterize as production homes?
ENTER PERCENTAGE..... \$ _____
[997 FOR DK, 998 FOR REFUSED]

IF E.5 = 0% ASK E.5a. ELSE SKIP TO E.6.

E.5.a What was the typical selling price of the production homes you built in 2004?
ENTER AVERAGE PRICE \$ _____
[997 FOR DK, 998 FOR REFUSED]

E.6 In which Vermont counties were your construction activities concentrated in 2004?

[ACCEPT MULTIPLE RESPONSES]

Addison	1
Bennington	2
Caledonia	3
Chittenden	4
Essex	5
Franklin	6
Grand Isle.....	7
Lamoille	8
Orange	9
Orleans	10
Rutland	11
Washington	12
Windham.....	13
Windsor	14
Don't know	97
Refused	98

E.7 How many people did you employ in Vermont in 2004?

ENTER NUMBER OF WORKERS _____

[997 FOR DK, 998 FOR REFUSED]

CONSTRUCTION PRACTICES

C.1 I am going to read a set energy-related home features. Please tell me whether you included these features in all, most, some, or in none of the homes you built in 2004. USE SAME CODING FOR ALL ITEMS IN C.1.

C.1.a. Attic insulation above R – 38

All homes built in 2004	1
Most of the homes.....	2
Some of the homes.....	3
None of the homes	4
Don't Know	97
Refused	98

- C.1.b. Wall insulation above R-19
- C.1.c. Basement insulation above R-10
- C.1.d. Floor insulation greater than R-10
- C.1.e. Low-e windows
- C.1.f. Argon-filled windows.
- C.1.g. Reduced air infiltration as measured using blower door equipment.
- C.1.h. ENERGY STAR high-efficiency heating and cooling equipment
- C.1.i. Duct sealing and leakage testing
- C.1.j. ENERGY STAR high-efficiency appliances
- C.1.k. ENERGY STAR hard-wired compact fluorescent lighting fixtures
- C.1.l. Home orientation to take advantage of solar gain.
- C.1.m. Energy-efficient mechanical ventilation systems
- C.1.n. Advanced controls such as fan timers, occupancy sensors, programmable t-stats

MARKETING OF ENERGY FEATURES IN CUSTOM HOMES

- C.2 **IF E.4 NOT > 0, SKIP TO P.1.a.** When you develop plans for a custom-built house, how often do you discuss energy-efficiency considerations with the owner? Would you say it is ...
- | | |
|-------------------------------|----|
| In All Cases..... | 1 |
| In most cases..... | 2 |
| In Some Cases..... | 3 |
| In Relatively Few Cases | 4 |
| Never | 5 |
| Don't Know | 97 |
| Refused | 98 |

C.3 When you develop plans for a custom-built house, how often do you develop estimates of energy use and energy costs for the finished building? Would you say it is ...

- In all cases..... 1
- In most cases 2
- In some cases 3
- In relatively few cases..... 4
- Never [SKIP TO C.4] 5
- Don't know [SKIP TO C.4]..... 97
- Refused [SKIP TO C.4]..... 98

C.3.a What guidelines or computation tools do you use to estimate energy use for new homes?

ENTER VERBATIM: _____

C.4 In your opinion, what are the benefits to homeowners including energy-efficient features?
[ACCEPT MULTIPLE RESPONSES. PROBE FOR OTHERS IF ONLY COST SAVINGS ARE MENTIONED.]

- Reduced energy costs, costs of ownership..... 1
- Greater comfort..... 2
- Feel good about making the right environmental choice 3
- Higher resale value for the house..... 4
- Lower long-term maintenance costs 5
- Longer useful life for components 6
- Other (Specify) _____ 99
- Don't know. 97
- Refused. 98

C.4.a How often do you discuss these benefits with buyers? Would you say it is ...

- In all cases..... 1
- In most cases 2
- In some cases 3
- In relatively few cases..... 4
- Never 5
- Don't know. 97
- Refused. 98

C.5 Do you offer energy efficiency features as priced options to your customers, as opposed to including them in your base design?

- Yes 1
- No 2
- Don't know 97
- Refused 98

IF C.5 = 1, ASK C.5.a. ELSE SKIP TO INSTRUCTIONS FOR P.1.

C.5a What energy efficiency feature do your customers request most frequently as a priced option?

[ACCEPT ONLY ONE RESPONSE]

Attic insulation above R – 38.....	1
Wall insulation above R-19	2
Basement insulation above R-10	3
Floor insulation greater than R-10	4
Low-e windows.....	5
Argon-filled windows.	6
Reduced air infiltration as measured using blower door equipment.....	7
ENERGY STAR high-efficiency heating and cooling equipment.....	8
Duct sealing and leakage testing	9
ENERGY STAR high-efficiency appliances	10
Home orientation to take advantage of solar gain.....	11
Advanced controls such as fan timers, occupancy sensors, programmable t-stats	12
Don't know	97
Refused	98

C.5.b What other energy efficiency features do the majority of your customers request?

[ACCEPT MULTIPLE RESPONSES]

Attic insulation above R – 38.....	1
Wall insulation above R-19	2
Basement insulation above R-10	3
Floor insulation greater than R-10	4
Low-e windows.....	5
Argon-filled windows.	6
Reduced air infiltration as measured using blower door equipment.....	7
ENERGY STAR high-efficiency heating and cooling equipment.....	8
Duct sealing and leakage testing	9
ENERGY STAR high-efficiency appliances	10
Home orientation to take advantage of solar gain.....	11
Advanced controls such as fan timers, occupancy sensors, programmable t-stats	12
Don't know	97
Refused	98

C.5.c What objections do customers typically raise to purchasing the energy efficient options?

[ACCEPT MULTIPLE RESPONSES]

Equipment cost	1
Equipment quality.....	2
Equipment manufacturer.....	3
Uncertainty about performance.....	4
Other	99
Don't know.	97
Refused.	98

MARKETING OF PRODUCTION HOMES AND ENERGY EFFICIENCY FEATURES

IF E.5 = 0, SKIP TO PC.1.

P.1.a Which of the following channels do you use to market your production homes? **[READ LIST; ACCEPT MULTIPLE RESPONSES]**

Real Estate Agents	1
Previous customers	2
Lenders	3
Website	4
Advertising in newspapers or other general media	5
Other (Specify)	99
Don't know.	97
Refused.	98

P.1.c Do you mention energy efficiency in any of the sales materials or advertising copy used to market your production homes?

No	0
Yes	1
Don't know.	97
Refused.	98

P.1.e **ASK IF P.1.c = YES.** What energy-related features of the home do you mention? DO NOT READ

Added insulation	1
Energy Code compliance	2
Energy efficient windows	3
Improved comfort	4
ENERGY STAR heating and/or cooling equipment	5
High-efficiency appliances	6
ENERGY STAR appliances	7
Energy-efficient lighting	8
Other (Specify)	9
Don't know	97
Refused	98

P.2 When you, your sales staff, or agents show new homes how often do you review energy-related aspects of the house with the prospective buyer? Would you say it is ...

In all or most cases.....	1
In some cases	2
In relatively few cases.....	3
Never	4
Don't know	97
Refused	98

P.3 Do you typically develop and provide to buyers estimates the annual energy use or energy costs associated with new homes?

No [SKIP TO P.5.a]	0
Yes	1
Don't know [SKIP TO P.5.a]	97
Refused [SKIP TO P.5.a]	98

P.3.a IF RESPONDENT ANSWERED C.5a, **SKIP TO P.5.a.** What guidelines or computation tools do you use to estimate energy use for new homes?

ENTER VERBATIM: _____

- P.5.a **IF RESPONDENT ANSWERED C.4. SEQUENCE, SKIP TO P.5.b.** In your opinion, what are the benefits to homeowners including energy-efficient features?
[ACCEPT MULTIPLE RESPONSES. PROBE FOR OTHERS IF ONLY COST SAVINGS ARE MENTIONED.]

Reduced energy costs, costs of ownership.....	1
Greater comfort.....	2
Feel good about making the right environmental choice	3
Higher resale value for the house.....	4
Lower long-term maintenance costs	5
Longer useful life for components	6
Other (Specify)	99
Don't Know	97
Refused	98

- P.5.b Do you identify the benefits of energy efficient construction and equipment in your marketing materials?

No	1
Yes	2
Don't Know	97
Refused	98

IMPORTANCE OF ENERGY EFFICIENCY TO BUSINESS STRATEGY

- PC.1 On a scale of 1 to 5 where 5 means 'Very Important' and 1 means 'Not at all Important': How important do you think energy efficiency features are in marketing your homes?

Not at all Important.....	1
Somewhat Unimportant	2
Neither Important nor Unimportant	3
Somewhat Important	4
Very Important.....	5
Don't know	97
Refused	98

- PC.2 Why do you say that?

ENTER VERBATIM: _____

RESIDENTIAL BUILDING ENERGY STANDARDS

R.1 Have you heard of the Residential Building Energy Standards, also known as Vermont's Residential Energy Code or the RBES?

No **SKIP TO H.1** 0
 Yes 1
 Don't know **SKIP TO H.1** 97
 Refused 98

R.2 What features do you think a home must have to comply with the Residential Building Energy Standards?

[ACCEPT MULTIPLE RESPONSES. DO NOT PROMPT OR READ LIST.]

Attic insulation above R – 38..... 1
 Wall insulation above R-19 2
 Basement insulation above R-10 3
 Floor insulation greater than R-10 4
 Low-e windows..... 5
 Argon-filled windows..... 6
 Reduced air infiltration as measured using blower door equipment..... 7
 High-efficiency heating and cooling equipment..... 8
 Duct sealing and leakage testing..... 9
 Energy-efficient mechanical ventilation system..... 10
 Other (Specify) 12
 Don't know 97
 Refused 98

R.4 In what percentage of homes you built in 2004 did you post certificates of compliance with the RBES?

ENTER PERCENTAGE..... %

[997 FOR DK, 998 FOR REFUSED]

HOME ENERGY RATING

H.1 Do you purchase home energy ratings by third-party agencies for any of the homes you build?

No **SKIP TO H.1.b** 0
 Yes 1
 Don't know **SKIP TO H.2** 97
 Refused **SKIP TO H.2** 98

H.1.a Do you purchase home energy ratings for ...

All the homes you build **SKIP TO H.2** 1
 Most of the homes you build **SKIP TO H.2** 2
 Some of the homes you build **SKIP TO H.2** 3
 Don't know **SKIP TO H.2** 97
 Refused **SKIP TO H.2** 98

H.1.b What are the main reasons that you do not purchase this service?

[ACCEPT MULTIPLE RESPONSES.]

Too expensive 1
 Don't know anything about service 2
 Not sure where to find appropriate ratings providers 3
 Unreliable/low-quality service 4
 No demand for service from customers 5
 Other (Specify): 5
 Don't know 97
 Refused 98

H.2 Do you recommend to your customers that they obtain home energy ratings?

No 0
 Yes **SKIP TO A.1** 1
 Don't know **SKIP TO A.1** 97
 Refused **SKIP TO A.1** 98

AWARENESS OF VERMONT ENERGY STAR HOMES PROGRAM

A.1.a. Have you heard of Vermont Energy Star Homes?

No **SKIP TO NP.14** 0
 Yes 1
 Don't know **SKIP TO NP.14**..... 97
 Refused **SKIP TO NP.14** 98

A.1.b Did you receive certification and financial incentives from Vermont Energy Star Homes for any of the homes you built during 2004?

No **SKIP TO NP.1** 0
 Yes 1
 Don't know **SKIP TO NP.1**..... 97
 Refused **SKIP TO NP.1** 98

A.1.c. How many of the homes you built in 2004 received certification from Vermont Energy Star Homes?

RECORD NUMBER OF HOMES
[997 FOR DK, 998 FOR REFUSED]

A.2.a From what source or sources did you learn about the Vermont Energy Star Homes program?
[ACCEPT MULTIPLE RESPONSES; DO NOT PROMPT OR READ LIST.]

Vermont Energy Star Home Program Staff 1
 Vermont Energy Star Home Direct Mail, Other Materials 2
 Efficiency Vermont Program Staff 3
 Efficiency Vermont Direct Mail, Other Materials 4
 Vermontwise Energy Services Program Staff 5
 Vermontwise Energy Services Direct Mail, Other Materials 6
 Other Builders 7
 Home Builders Associations 8
 Other Trade Or Professional Organizations 9
 Potential Homebuyers 10
 Other (Specify) _____ 99
 Don't know 97
 Refused 98

A.2.b Which of these was most influential in your decision to participate in the program?

[ACCEPT ONLY ONE RESPONSE.]

Vermont Energy Star Home Program Staff 1
 Vermont Energy Star Home Direct Mail, Other Materials 2
 Efficiency Vermont Program Staff 3
 Efficiency Vermont Direct Mail, Other Materials 4
 Vermontwise Energy Services Program Staff 5
 Vermontwise Energy Services Direct Mail, Other Materials 6
 Other Builders 7
 Home Builders Associations 8
 Other Trade Or Professional Organizations 9
 Potential Homebuyers 10

Other (Specify) _____	99
Don't know	97
Refused	98

A.3.a What was the main reason you decided to participate in the program?

[ACCEPT ONLY ONE RESPONSE; DO NOT PROMPT OR READ LIST.]

Get Marketing Support, Extra Publicity For The Company	1
Help Market The Houses That Get Labeled	2
Wanted To Learn More About Efficient Building Techniques	3
Wanted To Maintain Good Relationships With The Utilities.....	4
Generally Thinks That Environmental Issues Are Important.	5
Distinguish Company From Competitors	6
To Get Rebates.....	7
I've Been Getting Questions on Environmental Aspects Of Homes From Customers.....	8
I Could Charge More For Efficient Homes	9
Other (Specify) _____	99
Don't know	97
Refused	98

A.3.b Were there other important reasons?

[ACCEPT MULTIPLE RESPONSES.]

Get Marketing Support, Extra Publicity For The Company	1
Help Market The Houses That Get Labeled	2
Wanted To Learn More About Efficient Building Techniques	3
Wanted To Maintain Good Relationships With The Utilities.....	4
Generally Thinks That Environmental Issues Are Important.	5
Distinguish Company From Competitors	6
To Get Rebates.....	7
I've Been Getting Questions on Environmental Aspects Of Homes From Customers.....	8
Could Charge More For Efficient Homes.....	9
Other (Specify) _____	99
Don't know	97
Refused	98

- A.4. Can you name some of the construction and equipment features required for homes to be certified through the program?

[ACCEPT MULTIPLE RESPONSES.]

Home Energy Rating of 86 or higher.....	1
ENERGY STAR 5-star rating.....	2
High levels of insulation.....	3
Efficient heating equipment.....	4
Efficient cooling equipment.....	5
Efficient ventilation	6
Efficient water heating equipment.....	7
Air-sealing	8
Efficient light fixtures.....	9
Other (Specify) _____	99
Don't know SKIP TO X1	97
Refused SKIP TO X1	98

- A.5 Which of these energy efficiency measures were you aware of prior to participating in the program?

[ACCEPT MULTIPLE RESPONSES.]

High Score on Home Energy Rating	1
ENERGY STAR 5-star rating.....	2
High levels of insulation.....	3
Efficient heating equipment.....	4
Efficient cooling equipment.....	5
Efficient ventilation	6
Efficient water heating equipment.....	7
Air-sealing	8
Efficient light fixtures.....	9
Other (Specify) _____	99
Don't know	97
Refused	98

- A.15.a. Did installation of the features required to gain certification from the program result in added construction costs, compared to homes without those features?

No SKIP TO A.16	0
Yes	1
Don't know SKIP TO A.16	97
Refused SKIP TO A.16	98

- A.15.b **ASK IF A.15.a = YES.** How much were those additional costs on a typical home?

ENTER ADDITIONAL COST..... \$_____

[997 = DON'T KNOW, 998 = REFUSED]

- A.16. Compared to similar homes built in the same time period, were you able to sell homes certified through the program more easily?

No 0
 Yes 1
 Don't know 97
 Refused 98

A.17.a. Compared to similar homes built in the same time period, were you able to obtain a higher price for those certified through the program?

No **SKIP TO A.18.** 0
 Yes 1
 Don't know **SKIP TO A.18** 97
 Refused **SKIP TO A.18** 98

A.17.b On average, how much higher was the price?

ENTER ADDITIONAL PRICE \$ _____
[997 = DON'T KNOW, 998 = REFUSED]

A.18. Which elements of the program have you found most useful?

[DO NOT READ LIST; PROMPT IF NECESSARY.]

Plan review 1
 Training 2
 Financial Incentives 3
 Builder certification 4
 Marketing support..... 5
 Technical assistance in construction..... 6
 Assistance with code compliance 8
 Assistance in obtaining code certificate..... 9
 Can't name any services 10
 Other (Specify) 11
 Don't know 97
 Refused 98

A.20. What changes to the program would you recommend to make it more effective in supporting your construction and sale of energy-efficient homes?

ENTER VERBATIM: _____

NONPARTICIPATING BUILDER SEQUENCE.

NP.1 What is your understanding of the construction and equipment features required for homes to be certified through the program?

[DO NOT READ LIST; ACCEPT MULTIPLE RESPONSES.]

Home Energy Rating	1
ENERGY STAR 5-star rating.....	2
High levels of insulation	3
Efficient heating equipment.....	4
Efficient cooling equipment.....	5
Efficient ventilation	6
Efficient water heating equipment.....	7
Air-sealing	8
Efficient light fixtures.....	9
Other (Specify) _____	99
Don't know	97
Refused	98

NP.11 Are you familiar with the services Vermont Star Homes offers to home builders?

No	SKIP TO NP.13.a	0
Yes	1
Somewhat.....		2
Don't know	SKIP TO NP.13.a	97
Refused	SKIP TO NP.13.a	98

NP.12 Can you tell me what those services are?

[ACCEPT MULTIPLE RESPONSES]

Plan review	1
Training	2
Financial Incentives	3
Builder certification	4
Marketing support.....	5
Technical assistance in construction.....	6
Assistance with code compliance	8
Assistance in obtaining code certificate.....	9
Can't name any services	10
Other (Specify) _____	11
Don't know	97
Refused	98

NP.13.a. What is the main reason why you are not participating in the program?

[DO NOT READ; ACCEPT ONLY ONE RESPONSE.]

- No Trouble Selling Current Homes 1
- Customers Aren't Interested In Energy Issues 2
- No Time To Get Informed About Techniques 3
- Market Is Too Cost-Competitive, Couldn't Recover Extra Costs 4
- No Time To Get Informed About Program 5
- Don't Like The Program 6
- Other (Specify) 99

Don't know 97

Refused 98

NP.13.a. Any other reasons?

[DO NOT READ; ACCEPT MULTIPLE RESPONSES.]

- No Trouble Selling Current Homes 1
- Customers Aren't Interested In Energy Issues 2
- No Time To Get Informed About Techniques 3
- Market Is Too Cost-Competitive, Couldn't Recover Extra Costs 4
- No Time To Get Informed About Program 5
- Don't Like The Program 6
- Other (Specify) 99

Don't know 97

Refused 98

NP.14. The Vermont Energy Star Home program offers the following services to builders:

- Review of plans to identify energy saving opportunities;
- Training in energy efficient construction practices
- Technical assistance during construction;
- Free home energy rating;
- Financial incentives for meeting thermal requirements and for selected equipment;
and
- Marketing assistance, including advertising and payment for certain marketing materials.

NP.14.a Do you think this kind of program would be useful to you in marketing the homes you build?

No **SKIP TO NP.14.c.** 0
 Yes 1
 Don't know **SKIP TO NP.15** 97
 Refused **SKIP TO NP.15** 98

NP.14.b. What aspects of the program do you think will be most useful in marketing the homes you build? **ACCEPT MULTIPLES.**

Review of plans to identify energy saving opportunities 1
 Training in energy efficient construction practices 2
 Technical assistance during construction; 3
 Free home energy rating; 4
 Financial incentives 5
 Marketing assistance..... 6
 Other (Specify) 99
 Don't know 97
 Refused 98

SKIP TO NP.15

NP.14.c. Why do you think this program will not be useful to you? **ACCEPT MULTIPLES.**

Too much paperwork 1
 Don't like lead development and/or tracking process..... 2
 Don't like construction monitoring..... 3
 Don't like project inspection process or requirements..... 4
 Don't like level program contact with builder 5
 Financial incentives too low 6
 Don't know how to enroll in program 7
 Don't have a good understanding of program 8
 Other (Specify) 99
 Don't know 97
 Refused 98

REMODELING SEQUENCE

IF E2a3 = <25%, SKIP TO CLOSE.

X.1 This last set of questions refers to remodeling work your company did in 2004. First, roughly how many remodeling projects

RECORD NUMBER OF PROJECTS _____

[IF RESPONDENT ANSWERS “DON’T KNOW,” PROMPT FOR ESTIMATE.]

[997 = DON’T KNOW; 998 = REFUSED.]

X.5. What percentage your 2004 remodeling projects involved installing new heating or cooling equipment?

RECORD PERCENTAGE OF PROJECTS _____

[IF RESPONDENT ANSWERS “DON’T KNOW,” PROMPT FOR ESTIMATE.]

[997 = DON’T KNOW; 998 = REFUSED.]

X.6. What percentage your 2004 remodeling projects involved installing or replacing windows?

RECORD PERCENTAGE OF PROJECTS _____

[IF RESPONDENT ANSWERS “DON’T KNOW,” PROMPT FOR ESTIMATE.]

[997 = DON’T KNOW; 998 = REFUSED.]

X.7. What percentage your 2004 remodeling projects involved installing new hard-wired lighting fixtures?

RECORD PERCENTAGE OF PROJECTS _____

[IF RESPONDENT ANSWERS “DON’T KNOW,” PROMPT FOR ESTIMATE.]

[997 = DON’T KNOW; 998 = REFUSED.]

X.8 I am going to read a short list energy-related home features. Please tell me whether you included these features in all, most, some, or in none of the remodeling projects you completed in 2004.
USE SAME CODING FOR ALL ITEMS IN X.8.

X.8.a. Attic insulation above R – 38

All homes built in 2004	1
Most of the homes.....	2
Some of the homes.....	3
None of the homes	4
Don’t Know	97
Refused	98

X.8.b. Wall insulation above R-19

X.8.c. Basement insulation above R-10

X.8.d. Floor insulation greater than R-10

X.8.e. Low-e windows

X.8.f. Argon-filled windows.

X.8.g. Reduced air infiltration as measured using blower door equipment.

X.8.h. ENERGY STAR high-efficiency heating and cooling equipment

X.8.i. Duct sealing and leakage testing

X.8.j. ENERGY STAR hard-wired compact fluorescent lighting fixtures

X.9 Efficiency Vermont has recently launched a program that provides training to contractors in diagnosing common problems in existing homes related to insulation and air sealing, such as ice dams, drafts, mold, moisture accumulation, and high heating costs. The program also provides a \$100 incentive to the contractor to repair those problems and document the work. Would you be interested in participating in such a program?

Yes	1
No	2
Need more information	3
Don't Know	97
Refused	98

IF X.9 = 2, ASK X.10. ELSE GO TO X11.

X.10 Why are you not interested in participating in the program?

ENTER VERBATIM: _____

X.11 **IF X.9 = 3, ASK X.11. ELSE GO TO CLOSE.** What information would you need to help you make this decision?

ENTER VERBATIM: _____

CLOSE.

A.3 REMODELER QUESTIONNAIRE

VERMONT RESIDENTIAL PROGRAM EVALUATION
REMODELER QUESTIONNAIRE –04/01//05

Contact Name: [from sample]
 Company: [from sample]
 Address: [from sample]
 City, State, Zip [from sample]
 Telephone: [from sample]
 Market Area/Size Category: [from sample]
 Survey ID Number: _____

LEAD-IN: Hello, my name is _____ and I am calling from KEMA Consulting. We are conducting a survey of Vermont home remodeling contractors as part of an evaluation of the Efficiency Vermont's Residential Programs. We are conducting this evaluation on behalf of the Vermont Department of Public Service. May I speak with the person who is most responsible for decisions concerning the design and specification of the homes your company builds?

NAME OF CONTACT: _____

IF CONTACT IS NOT AVAILABLE, ASK FOR BEST TIME TO CALL BACK.

CALL BACK DATE/TIME: _____

REPEAT LEAD-IN FOR RESPONDENT IF NEEDED. We would like to interview you about your recent experience and views on energy efficiency in residential construction, as well about any experiences you may have had with Efficiency Vermont programs. The interview will take about twenty minutes. In appreciation for your time, we will enter you into a drawing for a prize with a cash value of \$1000. All responses you provide will be confidential.

Establishment Data

We'd like to begin by asking you a few general questions about your company.

E.1 Does your company provide services in states other than Vermont?

Yes 1
 No **SKIP TO E.2** 2
 Don't know **SKIP TO E.2** 3

E.1.a **IF E.1 = YES, ASK.** In which other states does your company provide services?

New Hampshire 1

New York..... 2
 Maine 3
 Massachusetts 4
 Other 5

E.1.b Approximately what percentage of your company's total 2004 revenues came from Vermont projects?

ENTER PERCENT, 997 FOR DK, REFUSED..... _____

E.2 Which of the following services does your company provide?

E.2.a **ASK FOR EACH SERVICE IDENTIFIED IN E.2.** Approximately what percentage of your company's 2004 revenues came from [SERVICE]?

Service	E.2	E.2.a
General contracting for residential new construction	1	
General contracting for commercial new construction	2	
General contracting for significant residential rehabilitation, renovation, or remodeling	3	
General contracting for significant commercial rehabilitation, renovation, or remodeling	4	
Other 1 (Specify)	5	
Other 2 (Specify)	6	

M.1 Roughly how many residential remodeling projects did you complete in Vermont in 2004?

ENTER NUMBER OF PROJECTS _____

IF FEWER THAN 4 REMODELING PROJECTS, THANK AND TERMINATE.

We would like to be able to separate these projects into those that involve the addition of new rooms (which include new walls and / or roof) and those that involve the renovation of existing rooms.

M.2a Of the remodeling projects mentioned, how many involved breaching the envelope of the home to add new space or rooms?

ENTER NUMBER OF PROJECTS _____

M.3a Do you specialize in the renovations of a particular room or space?

Yes 1
 No 2

M.3b [If R3a = Yes] What is it?

Kitchen 1
 Bath 2
 Other (specify)_____ 3

M.4 What was the typical cost of the remodeling projects you completed in 2004?
ENTER THE PRICE OR RANGE \$_____

M.5 What percentage your 2004 remodeling projects involved ...

- a. Installation of new heating or cooling equipment? _____
- b. Installation or replacement of windows _____
- c. Installation of new hard-wired lighting fixtures _____
- d. Installation of new clothes washer _____
- e. Installation of new clothes dryer _____
- f. Installation of new kitchen appliances _____

M.5.g **IF M.5.d, e, or f >0, ASK:** In what percentage of cases do you purchase appliances on behalf of the owner? PROBE FOR DIFFERENCES AMONG APPLIANCES.
ENTER PERCENT _____

M.7 And how many persons did you employ in Vermont in 2004?
ENTER NUMBER OF WORKERS _____

MARKETING OF ENERGY EFFICIENCY FEATURES

NR.1 When you develop plans for a major renovation or addition, how often do you discuss energy-efficiency considerations with the owner? Would you say it is ...

- In all or most cases 1
- In some cases 2
- In relatively few cases 3
- In no case 4
- Don't know 5

NR.2 I am going to read a set energy-related construction features. Please tell me whether you included these features in all major remodeling projects you completed in 2004, in most of those projects, in some, or in none of those projects.

Feature	All	Most	Some	None	N/A
a. Attic insulation above R – 38	1	2	3	4	5
b. Wall insulation above R-19	1	2	3	4	5
c. Basement insulation above R-10	1	2	3	4	5
d. Floor insulation greater than R-10	1	2	3	4	5
e. Low-e windows	1	2	3	4	5
f. Argon-filled windows.	1	2	3	4	5
g. Reduced air infiltration as measured using blower door equipment.	1	2	3	4	5
h. ENERGY STAR high-efficiency heating and cooling equipment	1	2	3	4	5
i. Duct sealing and leakage testing	1	2	3	4	5
j. ENERGY STAR high-efficiency appliances	1	2	3	4	5
k. ENERGY STAR hard-wired compact fluorescent lighting fixtures	1	2	3	4	5
l. Advanced controls such as fan timers, occupancy sensors, programmable t-stats	1	2	3	4	5
m. Hi-efficiency mechanical ventilation	1	2	3	4	5

FOR FEATURES = 3 or 4 (SOME OR NONE) ask: What is the main reason you generally do not include [FEATURE]?

FEATURE _____

REASON: _____

FEATURE _____

REASON: _____

NR.4.c What objections do customers typically raise when you propose energy-efficient features?

NR.5 When you develop plans for a major renovation or room addition, how often do you develop estimates of its impact on the home's energy use and energy costs? Would you say it is ...

- In all or most cases..... 1
 In some cases 2
 In relatively few cases..... 3
 In no case 4
 Don't know 5

NR.5.a **ASK IF NR.5 = 1,2,OR 3.** What guidelines or computation tools do you use to estimate energy use?

NR.6 In your opinion, what are the benefits to homeowners including energy-efficient features? [CIRCLE ALL MENTIONED. PROBE FOR OTHERS IF ONLY COST SAVINGS ARE MENTIONED.]

- Reduced energy costs, costs of ownership..... 1
 Greater comfort..... 2
 Feel good about making the right environmental choice..... 3
 Higher resale value for the house..... 4
 Lower long-term maintenance costs 5
 Longer useful life for components 6
 Other (Specify) 7

NR.6.a How often do you discuss these benefits with the homeowner? Would you say it is ...

- In all or most cases..... 1
 In some cases 2
 In relatively few cases..... 3
 In no case 4
 Don't know 5

RESIDENTIAL BUILDING ENERGY STANDARDS: ASK ALL REMODLERS.

R.1 Have you heard of the Residential Building Energy Standards, also known as Vermont's Residential Energy Code or the RBES?

- Yes 1
 No **SKIP TO A.1** 2
 Don't know **SKIP TO A.1** 3

- R.2 What features do you think a home must have to comply with the Residential Building Energy Standards? DO NOT PROMPT. MARK ALL MENTIONED.

Feature	Standard
a. Attic insulation at least R – 38	1
b. Wall insulation at least R-19	2
c. Basement insulation at least R-10	3
d. Floor insulation at least R-10	4
e. Low-e windows	5
f. Argon-filled windows.	6
g. Reduced air infiltration.	7
h. High efficiency heating and cooling equipment	8
i. Mechanical ventilation	9
j. Other: (Specify)	10
k. Don't know	11

AWARENESS OF ENERGY EFFICIENCY PROGRAMS

- A.1 Have you heard of the Vermont Energy Star Homes Program?

Yes 1
 No 2
 Don't know 3

IF A1=YES, ASK A2. ELSE SKIP TO X.1.

- A.2 Did you receive financial incentives from the VESH program for any homes that you built or remodeled in 2004?

Yes 1
 No 2
 Don't know 3

IF A2=YES, ASK A3. ELSE SKIP TO A.4.

- A.3.a How many of the homes you **built** in 2004 received financial incentives from Vermont Energy Star Homes _____

- A.3.b How many of the homes you **remodeled** in 2004 received financial incentives from Vermont Energy Star Homes?

ENTER NUMBER _____

READ: The following questions refer to the Vermont Energy Star Homes program currently operated by Efficiency Vermont.

A.4.a First, from what source or sources did you learn about the program? DO NOT READ.

A.4.b Which of these was most influential in your decision to participate in the program?

	A.4.a	A.4.b
Vermont Star Home program staff	1	1
Vermont Star Home direct mail, other materials	2	2
Efficiency Vermont program staff	3	3
Efficiency Vermont direct mail, other materials	4	4
Other remodelers	5	5
Homebuilders Association	6	6
Other trade or professional organizations	7	7
Potential homebuyers	8	8
Other (Specify)	9	9
Don't know	10	10

A.5.a What was the main reason you decided to participate in the program? DO NOT READ.

A.5.b Were there other important reasons?

	A.5.a	A.5.b
Get marketing support, extra publicity for the company	1	1
Wanted to learn more about efficient building techniques	3	3
Wanted to maintain good relationships with the utilities	4	4
Generally thinks that environmental issues are important.	5	5
Distinguish company from competitors	6	6
Get rebates	7	7
Getting more questions re: environmental aspects of homes from customers.	8	8
Could charge more for efficient renovations	9	9
Other (Specify)	10	10

- A.6. On a scale of 1 – 5 where 5 means ‘Very Important’ and 1 means ‘Not at all Important’: How important was your experience in the Vermont Star Home program in your decision to include energy efficient features in the homes you built or remodeled in 2004?

CODE 1 – 5, 8 FOR DK, 9 FOR REFA.8.a

- A.11 Which elements of the program have you found most useful in incorporating energy-efficient features in major remodeling projects?

- A.12 Which elements of the program have you found most useful in marketing and selling energy-efficient features as part of your remodeling business?

- A.13 What changes to the program would you recommend to make it more effective in supporting your construction and sale of energy-efficient features in the remodeling industry?

NONPARTICIPATING REMODELER SEQUENCE.

- NP.1 Are you familiar with the services and marketing support Vermont Star Homes offers to home builders?

Yes 1
 Somewhat..... 2
 No 3

IF NP.1 = YES OR SOMEWHAT, ASK NP.2, ELSE GO TO NP.3.

- NP.2 Can you tell me what those services are? CIRCLE ALL MENTIONED.

Plan review 1
 Training and technical assistance 2
 Home energy rating 3
 Financial incentives 4
 Energy Star Certification 5
 Marketing assistance (coop advertising, co-branding, materials) 6
 Other (Specify: _____) 8

NP.3 What is the main reason why you are not participating in the program? Are there other reasons?

	a. Main	b. Other
No trouble getting renovation work without it	1	1
Customers aren't interested in energy issues	2	2
No time to get informed about techniques	3	3
Market is too cost-competitive, couldn't recover extra costs	4	4
No time to get informed about program	5	5
Don't like the program	6	6
Program measures not applicable for many jobs they do	7	7
Other (Specify)	8	8

NP.3.c **ASK IF NP.3.a OR NP.3.b = 6 (DON'T LIKE THE PROGRAM).** What specifically do you not like about the program?

READ: The Vermont Energy Star Home program offers the following services to builders:

- Review of plans to identify energy saving opportunities
- Training and technical assistance in energy efficient construction techniques and energy code compliance.
- Home energy rating by certified raters.
- Rebates for home rating and inclusion of energy efficient equipment and features
- Marketing assistance, including coop advertising, co-branding, and payment for certain materials.

NP.4 Do you think this kind of program will be useful in marketing your company's remodeling services?

Yes 1
No 2

NP.4.a **ASK IF NP.4 = YES.** What aspects of the program do you think will be most useful in marketing remodeling services? Why those particular elements?

NP.4.b **ASK IF A.5 = NO.** Why do you think this program will not be useful to you?

X.1. Have you heard of the Home Performance with Energy Star Program?

Yes 1
No 2
Don't know 3

IF X.1 = YES, ASK X.2a. ELSE SKIP TO X.X.

X.2a Have you or an employee taken a training course offered by the program?

- Yes 1
 No 2
 Don't know 3

X.2b Have you or an employee received certification from the program?

- Yes 1
 No 2
 Don't know 3

X.2c Have you or others in your company attempted to sell the home inspection services for which the program provides training?

- Yes 1
 No 2
 Don't know 3

IF X.2c =YES ASK X.3. ELSE SKIP TO X.9.

X.3 How many inspections have you been able to sell?

ENTER NUMBER _____

X.4 How many inspections have you attempted to sell?

ENTER NUMBER _____

X.5 What sales approaches or messages appear to be working for you?

X.6 What sales challenges or objections do you encounter most frequently?

X.7 Do you plan to continue selling inspection-driven home improvement services?

- Yes 1
 No 2
 Don't know 3

IF X 7 = NO OR DON'T KNOW ASK X.8. ELSE X.x.

X.8 Why not?

THANK AND TERMINATE

X.9 The Home Performance with Energy Star Proposal provides incentives to builders to carry out home improvements that reduce energy use for heating and hot water while addressing problems associated with poor insulation or air sealing, such as indoor air quality, mold, and ice dams. The program offers:

- Training and certification in building diagnostics and energy savings estimation;
- Support in developing reports and proposals to the homeowner;
- Incentives of \$100 per home for qualifying improvements;
- Marketing support via materials and campaigns developed by EVT.

Would you be interested in participating in such a program?

Yes	1
No	2
Maybe	3
Don't know	4

IF X.9 = YES ASK X.10, ELSE SKIP TO INSTRUCTIONS FOR X.11.

X.10 What benefits do you think this kind of program would provide for your company?

IF X.9 = NO ASK X.11, ELSE SKIP TO INSTRUCTIONS FOR X.12.

X.11 Why is that?

THANK AND TERMINATE

IF X.9 = MAYBE OR DK, ASK X.12, ELSE END.

X.12 What information would you need to assess whether you are interested in participating in the program?

END

GET INFO FOR DRAWING

THANK YOU FOR YOUR TIME AND COOPERATION.

A.4 HVAC CONTRACTOR QUESTIONNAIRE

VERMONT PROGRAM EVALUATION HVAC CONTRACTOR QUESTIONNAIRE – FINAL

Contact Name: [from sample]
 Company: [from sample]
 Address: [from sample]
 City, State, Zip [from sample]
 Telephone: [from sample]
 Market Area/Size Category: [from sample]
 Survey ID Number: _____

LEAD-IN: Hello, my name is _____ and I am calling from KEMA Consulting on behalf of the Vermont Department of Public Service. We are conducting a survey of Vermont HVAC contractors as part of an assessment of energy use trends in Vermont. May I speak with the person who is most responsible for decisions concerning your HVAC installations?

NAME OF CONTACT: _____

IF CONTACT IS NOT AVAILABLE, ASK FOR BEST TIME TO CALL BACK.

CALL BACK DATE/TIME: _____

REPEAT LEAD-IN FOR RESPONDENT IF NEEDED. We would like to interview you about your recent experiences and views on energy efficiency in HVAC installations. The interview will take about twenty minutes. In appreciation for your time you will be entered into a drawing for a prize with a cash value of \$1000. All information you provide will remain confidential.

Establishment Data

We'd like to begin by asking you a few general questions about your company.

E1 Which of the following best describes the geographic area your company is active in?

- Your local city or town **[SKIP TO E2]** 1
- Your local metropolitan area **[SKIP TO E2]** 2
- A significant portion of Vermont **[SKIP TO E2]** 3
- All of Vermont **[SKIP TO E2]** 4
- A multi-state region 5
- Other (Specify: _____) 99

E1.a In which other states does your company provide services?

[ACCEPT MULTIPLE RESPONSES]

- New Hampshire 1
- New York..... 2

Maine 3
 Massachusetts 4
 Other (.....)..... 99

E1.b Approximately what percentage of your company's total 2004 revenues came from Vermont projects?

ENTER PERCENTAGE.....

[997 FOR DK, 998 FOR REFUSED]

E.2 How many employees work at this location?

E3 How many of these employees work in the field as HVAC technicians or installers?

E4 What percentage of your business does HVAC contracting (including both equipment and service) represent? %

E4.a **IF E4 <100% ASK:** What else does your company do?

E5 How would you break down your business in Vermont among the residential, commercial/institutional, and industrial sectors in the past 12 months?

[ENTER NUMBER OF JOBS IN THE PAST 12 MONTHS]

a. Residential
 b. Small/light Commercial (<10,000 sq. ft.)
 c. Larger Commercial/institutional
 d. Industrial

IF RESIDENTIAL BUSINESS IS LESS THAN 10 JOBS IN THE PAST 12 MONTHS (E5a. <10), SKIP TO C1.

I'd like to ask you some questions about your residential HVAC activities in 2004 in Vermont.

R1 In roughly how many homes in Vermont did you install heating or cooling equipment during the year 2004?

R1a. What percentage of these installations were in new, as opposed to existing, homes?

R2 In what percentage of the **homes** you worked on in 2004 did you install the following kinds of equipment?

HVAC RES Installation	R2
1. Natural gas furnaces	
2. Natural gas boilers	
3. Oil-fired boilers	
4. Oil-fired furnaces	
5. Other types of heating equipment (Propane / LP)	
6. Central air conditioner	
7. Heat pumps	
8. Duct work	
9. Hydronic distribution systems	
10. Hot water heaters	
11. Thermostats	

**IF COMMERCIAL BUSINESS IS ONE OR MORE JOBS IN THE PAST 12 MONTHS
(E5b., E5c., or E5d. ge 1) , ASK C1, ELSE SKIP TO EE1**

I'd also like to ask you some questions about your commercial/industrial HVAC activities in 2004 in Vermont.

C1 In roughly how many Vermont business facilities did you install heating or cooling equipment during the year 2004? _____

C1a. Roughly what percentage of these installations were in new, as opposed to existing, buildings?

C2 In roughly what percentage of your commercial projects did you install the following kinds of equipment?

HVAC C&I Installation	C2
a. Boilers (<1 Million BTUh)	
b. Boilers (>1 Million BTUh)	
c. Furnaces (<100,000 BTUh)	
d. Furnaces (>100,000 BTUh)	
e. Chillers (Built up systems)	
f. Packaged systems (Unitary equipment) <11 Tons	
g. Packaged systems (Unitary equipment) 11-20 Tons	
h. Packaged systems (Unitary equipment) >20 Tons	

Role of Energy Efficient HVAC Equipment

Next, I'd like to ask you some questions related to the energy-efficiency of HVAC systems.

EE1 Are you familiar with the ENERGY STAR specifications for HVAC equipment?

Yes for all types sold 1

Yes for some types sold 2

No [**SKIP TO EE2**] 3

Not sure..... 4

Don't know 97

**IF RESIDENTIAL BUSINESS IS LESS THAN 10 JOBS IN THE PAST 12 MONTHS (E5a. <10),
AND EE1 = 1 OR 2, ASK RE1, ELSE SKIP TO EE2**

Now I'd like to ask you about the percentage of **residential** HVAC equipment you installed in Vermont existing and newly constructed homes in 2004 that met certain energy efficiency levels.

Type of Residential HVAC Equipment	Efficiency Criteria	RE1a. % of units installed in 2004 Residential existing homes that meet or exceed	RE1b. % of units installed in 2004 Residential new construction that meet or exceed
1. Gas and Oil Furnaces	AFUE 90%		
2. Oil or Gas Boilers	AFUE 85%		
3. Central Air Conditioners	SEER 13		
4. Air Source Heat Pumps	SEER 13 and 7.7 HSPF		
5. Programmable Thermostats	Required Features: separate weekday and weekend programs; ability to maintain temperature within +/- 2 degrees of setpoint; override feature that does not automatically delete programs.		

**IF COMMERCIAL BUSINESS IS ONE OR MORE JOBS IN THE PAST 12 MONTHS
(E5b., E5c., or E5d. ge 1), ASK CE1a, ELSE SKIP TO EE2**

I'd like to ask you about the **C&I** HVAC equipment you installed in 2004. For several kinds of HVAC equipment I'm going to give you a definition of high efficiency and then ask you to tell me 3 things:

- Approximately what percentage of that type of system you sold in Vermont in 2004 met the definition of high efficiency;
- Your best estimate of the difference in the equipment cost to the customer between high efficiency and standard efficiency equipment on a typical project. [DO NOT INCLUDE THE EFFECT OF REBATES]
- Whether you keep that high efficiency equipment in stock

- CE1a Approximately what percentage of the Packaged HVAC units that are less than 11 tons or 135K BTU that you sold in Vermont in 2004 were 10.3 EER or higher?
- CE1b For this size system, what is the approximate incremental cost of a high efficiency system? Will you be giving that to me in DOLLARS or PERCENTAGE?
- CE1c RECORD DOLLAR AMOUNT: _____
- CE1d RECORD PERCENTAGE: _____%
- CE1e Do you keep this high efficiency equipment in stock? _____
-
- CE2a Approximately what percentage of the Packaged HVAC units between 11 to 20 tons or 135K to 240K BTU that you sold in Vermont in 2004 were 9.7 EER or higher? _____
- CE2b For this size system, what is the approximate incremental cost of a high efficiency system? Will you be giving that to me in DOLLARS or PERCENTAGE?
- CE2c RECORD DOLLAR AMOUNT: _____
- CE2d RECORD PERCENTAGE: _____%
- CE2e Do you keep this high efficiency equipment in stock? _____
-
- CE3a Approximately what percentage of the Packaged HVAC units that are greater than 20 tons or 240K BTU that you sold in Vermont in 2004 were 9.5 EER or higher? _____
- CE3b For this size system, what is the approximate incremental cost of a high efficiency system? Will you be giving that to me in DOLLARS or PERCENTAGE?
- CE3c RECORD DOLLAR AMOUNT: _____
- CE3d RECORD PERCENTAGE: _____%
- CE3e Do you keep this high efficiency equipment in stock? _____

- CE4a Approximately what percentage of the BOILERS less than 1 MM BTU that you sold in Vermont in 2004 were at least 87 percent Thermal Efficient? _____
- CE4b For this size system, what is the approximate incremental cost of a high efficiency system? Will you be giving that to me in DOLLARS or PERCENTAGE?
- CE4c RECORD DOLLAR AMOUNT: _____
- CE4d RECORD PERCENTAGE: _____%
- CE4e Do you keep this high efficiency equipment in stock? _____
-
- CE5a Approximately what percentage of the BOILERS greater than 1 MM BTU that you sold in Vermont in 2004 were at least 85 percent Thermal Efficient? _____
- CE5b For this size system, what is the approximate incremental cost of a high efficiency system? Will you be giving that to me in DOLLARS or PERCENTAGE?
- CE5c RECORD DOLLAR AMOUNT: _____
- CE5d RECORD PERCENTAGE: _____%
- CE5e Do you keep this high efficiency equipment in stock? _____
-
- CE6a Approximately what percentage of the Furnaces for Commercial/Industrial applications, that were less than 100K BTU that you sold in Vermont in 2004 were at least 90 percent AFUE? _____
- CE6b For this size system, what is the approximate incremental cost of a high efficiency system? Will you be giving that to me in DOLLARS or PERCENTAGE?
- CE6c RECORD DOLLAR AMOUNT: _____
- CE6d RECORD PERCENTAGE: _____%
- CE6e Do you keep this high efficiency equipment in stock? _____
-
- CE7a Approximately what percentage of the Commercial Furnaces greater than 100K BTU that you sold in Vermont in 2004 were at least 88 percent AFUE? _____
- CE7b For this size system, what is the approximate incremental cost of a high efficiency system? Will you be giving that to me in DOLLARS or PERCENTAGE?
- CE7c RECORD DOLLAR AMOUNT: _____
- CE7d RECORD PERCENTAGE: _____%
- CE7e Do you keep this high efficiency equipment in stock? _____

[ALL RESPONDENTS]

I'd next like to ask you about the role that energy efficiency HVAC options plays in your business.

- EE2 On a scale of 1 to 5 where 5 means 'Very Important' and 1 means 'Not at all Important': How important do you think energy efficiency HVAC options are in marketing your business?
- Not at all Important..... 1
- Somewhat Unimportant 2
- Neither Important nor Unimportant 3
- Somewhat Important 4
- Very Important..... 5

Don't know	97
Refused	98

EE2a. Why do you say that?

ENTER VERBATIM: _____

EE3 How often do you discuss energy efficiency with your customers?

In all sales situations	1
In most sales situations	2
In some sales situations.....	3
In relatively sales situations.....	4
Never	5
Don't know.	97
Refused.	98

EE3a. What types of things do you say about energy efficiency to your customers?

[RECORD VERBATIM]: _____

EE4 What are the most common reasons customers give for not purchasing higher efficiency HVAC equipment? **[DO NOT PROMPT; ACCEPT MULTIPLE RESPONSES]**

Equipment cost	1
Equipment quality.....	2
Equipment manufacturer.....	3
Uncertainty about performance.....	4
Other (specify).....	99
Don't know.	97
Refused.	98

EE5 What percentage of the time do you develop and provide to customers estimates the annual energy use or energy costs associated with different types of HVAC equipment?

RECORD PERCENTAGE:	%
Don't know	97
Refused [SKIP TO EE6]	98

EE5a. What guidelines or computation tools do you use to estimate energy use for customers? **[PROBE FOR VARIATIONS IN RESIDENTIAL VS. C&I CUSTOMERS, IF RESPONDENT SERVES BOTH]**

ENTER VERBATIM: _____

EE6 In your opinion, what are the benefits to homeowners including energy-efficient features?

[ACCEPT MULTIPLE RESPONSES. PROBE FOR OTHERS IF ONLY COST SAVINGS ARE MENTIONED]

Reduced energy costs, costs of ownership.....	1
Greater comfort.....	2
Feel good about making the right environmental choice.....	3
Higher resale value for the house.....	4
Lower long-term maintenance costs	5
Longer useful life for components	6
Other (Specify)	99
Don't Know	97
Refused	98

IF RESPONDENT HAS COMPLETED ANY C&I HVAC JOBS IN VT IN THE PAST 12 MONTHS, ASK CO SERIES, ELSE SKIP TO DM1

I'd also like to ask you a few questions about commissioning.

CO1 About what percentage of the commercial or industrial systems you install undergo a formal commissioning process?

None [SKIP TO DM1]	1
1-10 percent	2
11-25 percent	3
26 to 50 percent.....	4
50-74 percent	5
More than 75 percent	6
Don't know	7

CO2 Who does the commissioning?

Your Company.....	1
A commissioning agent	2
A test and balance firm	3
The design engineer	4
A representative of the building owner.....	5
Other (specify)	6

CO3 How is the cost of commissioning handled?

Included in our price	1
Paid to us by the owner as an extra cost service	2
Paid to us by the architect/general contractor	3
Paid to a third party by the owner.....	4
Paid to a third party by the architect/general contractor	5
Internal cost for the owner	6

Other (specify) _____ 7

CO4 What do you see as the main benefits of commissioning?

Reduced call-backs/greater reliability 1

Improved occupant comfort..... 2

Greater customer satisfaction..... 3

Quality control 4

Differentiates us in the market..... 5

Other (specify) _____ 6

CO5 **IF LESS THAN 75 PERCENT COMMISSIONED, ASK:** What start-up and testing procedure do you use for other systems? [ENTER VERBATIM]

CO6 What is the main reason for systems not going through a more formal commissioning process?

(DO NOT READ LIST)

Customers don't ask for it/don't see the value of it 1

Costs too much/not worth the extra cost..... 2

Our procedures work fine 3

Causes delays..... 4

Wouldn't know how to go about it 5

Other (specify) _____ 6

Stocking and Installation Procedures

DM1 In replacement installations, how do you size the equipment you install?

- Replace with same size 1
- Rule of thumb (e.g. BTUh/sq foot) 2
- Manual J calculation 3
- Respond with whatever bid request calls for 4
- Software from manufacturer 5
- Other (specify) 6

ASK DM SERIES IF RESPONDENT REPORTS BOTH > 10 RESIDENTIAL AND ANY C&I JOBS IN VT IN THE LAST 12 MONTHS (else skip to B1):

DM2a. Is your approach to sizing HVAC equipment different for residential vs. commercial/industrial installations?

- Yes 1
- No [**SKIP TO DM3**] 2

DM2b. Please describe how you size HVAC equipment differently for residential vs. commercial/industrial installations:

DM3 What duct installation procedures do you use to promote efficient HVAC system operation?
[DO NOT READ; CIRCLE ALL MENTIONED]

- Insulation of all ducts in unconditioned spaces.. 1
- Use of special duct mastic to seal joints, seams, holes, corners..... 2
- Installation of cold air returns in all rooms except kitchen, bath and laundry 3
- Placement of ducts in conditioned spaces wherever possible 4
- Zoning of hydronic system distribution system 5
- Other (Specify:)..... 6
- None/Don't know [**SKIP TO DM4**] 97

DM4 What procedures do you follow to ensure proper airflow over interior coils in new or replacement installations? [PROMPT IF NECESSARY]

- Don't check..... 1
- Use manometer 2
- Use magnehelic gauge 3
- Measure temperature drop 4
- Use Other (specify) 5
- Don't know 97

DM4a. **IF NOT ALL INSTALLATIONS GET THE SAME, PROBE FOR WHAT % GET EACH APPROACH, AND WHY.** Enter Verbatim:

DM5 What procedures do you typically use to check for correct refrigerant charging in new installations?

Weigh refrigerant..... 1
 Use Superheat method 2
 Use magnehelic gauge 3
 Use Subcooling method 4
 Use Other (specify) 5
 Don't know 97

DM5a. **IF NOT ALL INSTALLATIONS GET THE SAME, PROBE FOR WHAT % GET EACH APPROACH, AND WHY.** Enter Verbatim:

DM6 – DM7 In replacement installations, what percentage of the existing equipment that you find has been:

[ENTER 997 for DON'T KNOW]

	DM6. Residential %	DM7. C&I %
a. Properly sized		
b. Oversized		
c. Undersized		

DM8 – DM9 What types of installations are most likely to have been mis-sized?

[ENTER 997 for DON'T KNOW]

	DM8. Residential	DM9. C&I
a. By Size		
b. By Type of Equipment		
c. By Type of Customer		

MARKETING TO BUILDERS AND GENERAL CONTRACTORS**[ASK ONLY RESPONDENTS WHO HAVE COMMERCIAL/INDUSTRIAL HVAC BUSINESS IN VT]**

The next set of questions address how you market energy-efficient heating and cooling equipment to builders and general contractors.

B1 Of the projects you completed as a subcontractor over the past two years, what percentage did you get

- a. By submitting a price bid on a written or verbal specification to the builder or general contractor? % _____
- b. Through existing relations with the builder, with no bidding ? % _____
- c. By submitting a statement of qualifications to the builder? % _____
- d. Bid direct to owner? % _____
- e. Other methods (Specify) _____ % _____

B2 On what percentage of new construction projects did you....

- a. Recommend or specify the capacity of the units to be installed % _____
- b. Recommend or specify the efficiency level of the units to be installed % _____

B2a. How much influence do you think your recommendations had on the general contractors' selection of heating and cooling equipment?

- A lot 1
- Some 2
- Not much [SKIP TO B3] 3
- None [SKIP TO B3] 4
- Don't know [SKIP TO B3]..... 97

B2b. **ASK IF B2a = 1 OR 2:** Can you give me an example of the kinds of influence you had on a builder's selection of heating and cooling equipment?

B3 Over the past two years has a builder or general contractor ever requested that you install equipment that exceeds current minimum federal efficiency standards?

- Yes 1
- No [SKIP TO B4] 2

B3a. In what percentage of projects did this occur? _____ %

B4 Over the past two years, has a builder or general contractor ever specifically requested that you install equipment that was ENERGY STAR-qualified?

Yes 1

No [**SKIP TO B5**] 2

B4a In what percentage of projects did this occur? _____ %

B5 Do you think there are any business advantages for your company in marketing high-efficiency heating and cooling equipment to builders and general contractors?

Yes 1

No 2

B5a. **ASK IF B.5 = YES:** What are those advantages?

B5b. **ASK IF B.5 = NO:** Why do you think there are no advantages?

B5c. [**ALL**] Are there any disadvantages to marketing high-efficiency equipment? [IF YES, PROBE WHAT THEY ARE]

B6 Have you found that call-backs to address problems are more frequent when you use energy efficient versus standard equipment, less frequent, or about the same?

More frequent 1

Less frequent [**SKIP TO A1**] 2

About the same [**SKIP TO A1**] 3

Don't know [**SKIP TO A1**] 97

B6a. **IF B6 = MORE FREQUENT, ASK:** What kinds of problems do you most frequently encounter with high efficiency equipment?

AWARENESS AND UNDERSTANDING OF EVT PROGRAMS

[ALL RESPONDENTS]

A1 Have you heard of the following? [READ LIST; CIRCLE ALL THAT APPLY]

Vermont Energy Star Homes	1
Efficient HVAC Equipment Rebate.....	2
Cool Choice C&I HVAC Rebate Program	3

A2 Are you familiar with the technical services and marketing support that the **Vermont Energy Star Homes program** offers to home builders?

Yes	1
Somewhat.....	2
No [SKIP TO A3].....	3

A2a. Can you tell me what those services are?

[DO NOT READ; CIRCLE ALL MENTIONED]

Guidelines for energy-efficient new construction.....	1
Certification of energy-efficient construction by trained third-party	2
Home Energy Raters.....	3
Use of the Energy Star label on the home and marketing materials	4
Co-advertising and other types of marketing support.....	5
Financial incentives for including energy efficient features in new homes	6
Training and assistance in RBES code compliance	7
Other (Specify) _____	8

A3 [**READ TO ALL**]: The Vermont Energy Star Home Program offers the following services to builders:

- Guidelines for energy-efficient new construction.
- Certification of energy-efficient construction by trained third-party Home Energy Raters.
- Use of the Energy Star label on the home and marketing materials.
- Co-advertising and other types of marketing support.
- Financial incentives for including energy efficient features in new homes.

A3a. On a scale of 1—5, where 1 is very effective and 5 is not at all effective, how effective do you think this kind of program will be effective in encouraging homebuilders to include high-efficiency HVAC equipment in their houses?

- Very effective 1
 Somewhat effective..... 2
 Neither effective nor ineffective 3
 Somewhat ineffective..... 4
 Very ineffective 5

A3a1. Why do you say that? _____

A3b. On a scale of 1—5, where 1 is very effective and 5 is not at all effective, how effective do you think this kind of program will be effective in encouraging proper sizing and installation of HVAC equipment in new homes?

- Very effective 1
 Somewhat effective..... 2
 Neither effective nor ineffective 3
 Somewhat ineffective..... 4
 Very ineffective 5

A3b1. Why do you say that? _____

A4 Are you familiar with the services and incentives that Efficiency Vermont offers to residential customers under the **Efficient HVAC Equipment Rebate Program**?

- Yes 1
 Somewhat..... 2
 No [**SKIP TO A5**]..... 3

A4a. Can you tell me what those services are?

[DO NOT READ; CIRCLE ALL MENTIONED]

- Customer air conditioning incentive 1
 Customer heating equipment incentive..... 2
 Dealer incentive 3
 Other (Specify) 4

A5 [**READ TO ALL**]: The **Efficient HVAC Equipment Rebate Program** offers HVAC contractors incentives to sell and install efficient HVAC equipment:

Customer air conditioning incentive. \$200 incentive for the installation of central air conditioners with a SEER rating of 13 or higher and an EER of 11.

Customer heating equipment incentive. \$150 incentive for ENERGY STAR qualified gas heating systems with efficient furnace fans or oil furnaces with AFUE above 85 percent.

Dealer incentive. \$50 spiff to dealers for installation of the above items.

- A5a. On a scale of 1—5, where 1 is very effective and 5 is not at all effective, how effective do you think this kind of program will be effective in encouraging HVAC contractors to sell and install more efficient HVAC equipment to residential customers?

Very effective 1

Somewhat effective..... 2

Neither effective nor ineffective 3

Somewhat ineffective..... 4

Very ineffective 5

- A5b. Why do you say that? _____

- A6 Have you participated in (received rebates from) the **Efficient HVAC Equipment Rebate Program?**

Yes 1

No **[SKIP TO A7]** 2

Don't know **[SKIP TO A7]**..... 3

- A6a. **IF A6 = YES, ASK:** What aspects of the Efficient HVAC Equipment Rebate Program have you found work well? **[ENTER VERBATIM]**

- A6b. **IF A6 = YES, ASK:** What aspects of the Efficient HVAC Equipment Rebate Program would you change/improve upon if you could? **[ENTER VERBATIM]**

A7 Are you familiar with the services and incentives that Efficiency Vermont offers to residential customers under the **Cool Choice program**?

Yes 1
 Somewhat..... 2
 No [**SKIP TO A8**].....3

A7a. Can you tell me what those services are?

[DO NOT READ; CIRCLE ALL MENTIONED]

Customer air conditioning incentive 1
 Customer heating equipment incentive..... 2
 Dealer incentive 3
 Other (Specify) 4

A8 [**READ TO ALL**]: The Cool Choice program offers contractors incentives per unit ton on HVAC high efficiency HVAC systems installed in C&I establishments (ranging from 80-90\$/ton)

A8a. Do you think this kind of program will be effective in encouraging HVAC contractors to sell and install more efficient HVAC equipment to C&I customers?

Yes 1
 No 2
 Don't know [**SKIP TO A9**].....3

A8b. **ASK IF A8a = YES:** Why do you think the program will be effective?

A8c. **ASK IF A8a = NO:** Why do you think the program will not be effective?

A9 Have you participated in (received rebates from) the Cool Choice Program?

Yes 1
 No [**SKIP TO F1**] 2
 Don't know [**SKIP TO F1**]3

A9a. **IF A9 = YES, ASK:** What aspects of the Cool Choice Program have you found work well?

[ENTER VERBATIM]

A9b. **IF A9 = YES, ASK:** What aspects of the Cool Choice Program would you change/improve upon if you could? [ENTER VERBATIM]

I have just a final couple questions on your sense of what direction you see HVAC technologies and services going in the future.

F1 What new HVAC technologies do you see emerging or becoming more widely utilized in the next 2-3 years that offer opportunities for energy efficiency?

F2 **IF RESPONDENT HAS C&I BUSINESS ASK:** What specific program services do you think would be most effective in helping your company promote energy efficient HVAC equipment to commercial and industrial customers? Why do you say that?

F3. **IF RESPONDENT HAS RESIDENTIAL BUSINESS ASK** What specific program services do you think would be most effective in helping your company promote energy efficient HVAC equipment to residential customers? Why do you say that?

CLOSE.

Those are all the questions I have for you today. Thank you for your time and cooperation.
May I verify your address for the drawing?

Name:

Street:

City:

State:

ZIP:

Phone:

THANK YOU FOR YOUR TIME AND COOPERATION

A.5 INSULATION CONTRACTOR QUESTIONNAIRE**VERMONT RESIDENTIAL PROGRAM EVALUATION
INSULATION CONTRACTOR QUESTIONNAIRE – FINAL**

Contact Name: [from sample]
Company: [from sample]
Address: [from sample]
City, State, Zip [from sample]
Telephone: [from sample]
Market Area/Size Category: [from sample]
Survey ID Number: _____

LEAD-IN: Hello, my name is _____ and I am calling from KEMA Consulting on behalf of the Vermont Department of Public Service. We are conducting a survey of Vermont home insulation contractors as part of an assessment of residential energy use in Vermont. May I speak with the person who is most responsible for decisions concerning insulation practices for your company?

NAME OF CONTACT: _____

IF CONTACT IS NOT AVAILABLE, ASK FOR BEST TIME TO CALL BACK.

CALL BACK DATE/TIME: _____

REPEAT LEAD-IN FOR RESPONDENT IF NEEDED. We would like to interview you about your recent experience and views on energy efficiency in residential construction, as well about any experiences you may have had with Efficiency Vermont programs. The interview will take about fifteen minutes. In appreciation for your time, we will enter you into a drawing for a prize with a cash value of \$1000. All responses you provide will be confidential.

SCREENER

E1 Did your company install insulation in homes in Vermont in 2004?

Yes 1
No 2

IF E1 = NO, THANK AND TERMINATE.

E1a. Roughly how many residential insulation projects did you complete in Vermont in 2004?

ENTER NUMBER OF PROJECTS _____

IF FEWER THAN 4 REMODELING PROJECTS, THANK AND TERMINATE.

Establishment Data

We'd like to begin by asking you a few general questions about your company.

E2 Does your company provide services in states other than Vermont?

- Yes 1
 No [**SKIP TO E3**] 2
 Don't know [**SKIP TO E3**] 3

E2a. In which other states does your company provide services?

[**ACCEPT MULTIPLE RESPONSES**]

- New Hampshire 1
 New York..... 2
 Maine 3
 Massachusetts 4
 Other (.....)..... 5

E2b. Approximately what percentage of your company's total 2004 revenues came from Vermont projects?

ENTER PERCENT, 997 FOR DK, REFUSED..... _____

E3 Which of the following services does your company provide?

E3a. **ASK FOR EACH SERVICE IDENTIFIED IN E2:** Approximately what percentage of your company's 2004 revenues came from [SERVICE]?

Service	E3	E3a
General contracting for residential new construction	1	
General contracting for commercial new construction	2	
General contracting for residential rehabilitation, renovation, or remodeling	3	
General contracting for commercial rehabilitation, renovation, or remodeling	4	
Other 1 (Specify)	5	
Other 2 (Specify)	6	

E4 In how many new homes did you install insulation during the year 2004?

ENTER NUMBER _____

E5 And in roughly how many existing homes did you install insulation this year?

ENTER NUMBER OF HOMES _____

E6 How many employees work at this location?
 ENTER NUMBER OF EMPLOYEES _____

MARKETING OF ENERGY EFFICIENCY FEATURES

NOW I'D LIKE TO ASK YOU A FEW QUESTIONS ABOUT YOUR EXPERIENCE IN SELLING ENERGY EFFICIENT FEATURES.

M1 When you discuss plans for an insulation job with a customer, how often do you discuss options for different levels of insulation? ...

- In all cases..... 1
 In most cases 2
 In some cases 3
 In relatively few cases..... 4
 In no case 5
 Don't know 6

M2 I am going to read a set of energy-related insulation features. Please tell me what percentage of the major projects you completed in 2004 included each of these features.

Feature	% of 2004 Projects	N/A
a. Attic insulation above R – 38		5
b. Wall insulation above R-19		5
c. Basement insulation above R-10		5
d. Floor insulation greater than R-10		5
e. Reduced air infiltration as measured using blower door equipment.		5
f. Duct sealing and leakage testing		5

FOR FEATURES WHERE THE PERCENTAGE IS LESS THAN 25% ask: What is the main reason you generally do not include [FEATURE]?

FEATURE _____

REASON: _____

FEATURE _____

REASON: _____

M3 Of the new construction projects you completed as a subcontractor over the past two years, what percentage did you get

- a. By submitting a price bid on a written or verbal specification % _____
- b. Through existing relations with the Builder, with no bidding % _____
- c. By submitting qualifications % _____
- d. Product manufacturer referral..... % _____
- e. Through other channels (Specify) _____ % _____

M4 When you submit bids or proposals, do you include pricing options for energy-efficient features, such as insulation levels higher than code, insulation to basement walls, and air sealing?

- Yes 1
- Sometimes 2
- No [**SKIP TO M4b**] 3

In what percentage of new construction jobs do you submit pricing for each of the following energy efficient options:

M4a. Insulation levels higher than code: ENTER PERCENT % _____

M4b. Insulation to basement walls: ENTER PERCENT % _____

M4c. Air sealing: ENTER PERCENT % _____

M4d. On what percentage of new construction projects did you (as opposed to the builder) specify the type *and* level of insulation to be installed?

ENTER PERCENT % _____

M5 OVER THE PAST TWO YEARS, HAS A BUILDER OR GENERAL CONTRACTOR EVER REQUESTED THAT YOU INSTALL INSULATION TO LEVELS THAT EXCEED EXCEEDS CURRENT MINIMUM EFFICIENCY STANDARDS?

- YES 1
- NO [**SKIP TO M6**] 2

M5A. **ASK IF M5 = YES:** IN WHAT PERCENTAGE OF PROJECTS DID THIS OCCUR ...% _____

M5B. WHAT DO YOU THINK WAS THE BUILDER'S OR GENERAL CONTRACTOR'S MOTIVATION FOR REQUESTING HIGHER EFFICIENCY PRODUCT(S)?

M6 DO YOU OFFER AIR-SEALING SERVICES?

YES 1

NO [SKIP TO M7] 2

M6A. DO YOU USE BLOWER DOORS TO LOCATE INFILTRATION POINTS?

YES 1

NO 2

M6B. HAVE YOU ATTEMPTED TO SELL AIR SEALING OR AIR LEAKAGE TESTING SERVICES TO HOMEBUILDERS FOR USE IN NEW HOMES?

YES 1

NO [SKIP TO M6E] 2

M6C. **ASK IF M6B. = YES:** HAVE ANY HOMEBUILDERS PURCHASED AIR SEALING AND LEAK TESTING SERVICES FROM YOU?

YES 1

NO 2

M6D. **ASK IF M6C. = YES:** ON HOW MANY UNITS OF NEW HOUSING HAVE YOU PROVIDED AIR SEALING SERVICES OVER THE PAST 2 YEARS?

ENTER NUMBER OF UNITS..... _____

M6E. WHAT ARE SOME OF THE TYPICAL OBJECTIONS BUILDERS GIVE TO PURCHASING AIR-SEALING SERVICES?

M7 DO YOU THINK THERE ARE ANY BUSINESS ADVANTAGES FOR YOUR COMPANY IN MARKETING HIGH LEVELS OF INSULATION AND AIR SEALING TO BUILDERS AND GENERAL CONTRACTORS?

YES 1

NO

2

M7A. **ASK IF M7 = YES:** WHAT ARE THOSE ADVANTAGES?

M7b. **ASK IF M7 = NO:** Why do you think there are no advantages?

RESIDENTIAL BUILDING ENERGY STANDARDS: ASK ALL CONTRACTORS.

R1 Have you heard of the Residential Building Energy Standards, also known as Vermont's Residential Energy Code or the RBES?

Yes 1
 No [**SKIP TO A1**] 2
 Don't know [**SKIP TO A1**] 3

R2 What features do you think a home must have to comply with the Residential Building Energy Standards? [DO NOT PROMPT. MARK ALL MENTIONED]

Feature	Standard
a. Attic insulation at least R – 38	1
b. Wall insulation at least R-19	2
c. Basement insulation at least R-10	3
d. Floor insulation at least R-10	4
e. Low-e windows	5
f. Argon-filled windows.	6
g. Reduced air infiltration.	7
h. High efficiency heating and cooling equipment	8
i. Mechanical ventilation	9
j. Other: (Specify)	10
k. Don't know	11

AWARENESS OF ENERGY EFFICIENCY PROGRAMS

A1 Have you heard of the Vermont Energy Star Homes Program?

Yes 1
 No [SKIP TO X1] 2
 Don't know [SKIP TO X1] 3

A2 Did you receive financial incentives from the VESH program for any new residential construction or existing homes that you insulated in 2004?

Yes 1
 No [SKIP TO A4] 2
 Don't know [SKIP TO A4] 3

A3a. How many of the new residential construction you insulated in 2004 received financial incentives from Vermont Energy Star Homes _____

A3b. How many of the existing homes you insulated in 2004 received financial incentives from Vermont Energy Star Homes?

ENTER NUMBER _____

[READ]: The following questions refer to the Vermont Energy Star Homes program currently operated by Efficiency Vermont.

A4a. First, from what source or sources did you learn about the program? DO NOT READ.

A4b. Which of these was most influential in your decision to participate in the program?

	A4a.	A4b.
Vermont Star Home program staff	1	1
Vermont Star Home direct mail, other materials	2	2
Efficiency Vermont program staff	3	3
Efficiency Vermont direct mail, other materials	4	4
Other remodelers	5	5
Homebuilders Association	6	6
Other trade or professional organizations	7	7
Potential homebuyers	8	8
Other (Specify)	9	9
Don't know	10	10

A5a. What were the reasons you decided to participate in the program? DO NOT READ.

A5b. What was the most important reason?

	A5a.	A5b.
--	------	------

Get marketing support, extra publicity for the company	1	1
Wanted to learn more about efficient building techniques	3	3
Wanted to maintain good relationships with the utilities	4	4
Generally thinks that environmental issues are important.	5	5
Distinguish company from competitors	6	6
Get rebates	7	7
Getting more questions re: environmental aspects of homes from customers.	8	8
Could charge more for efficient renovations	9	9
Other (Specify)	10	10

- A6 On a scale of 1 – 5 where 5 means ‘Very Important’ and 1 means ‘Not at all Important’: How important was your experience in the Vermont Star Home program in your ability to include higher levels of insulation / or other extra efficiency features in the homes you worked on in 2004?

CODE 1 – 5, 8 FOR DK, 9 FOR REF _____

- A7 Which elements of the program have you found most useful in helping to get energy-efficient features incorporated into your home insulation projects?

- A8 Which elements of the program have you found most useful in marketing and selling energy-efficient features as part of your business?

- A9 What changes to the program would you recommend to make it more effective in supporting your sale of energy-efficient features?

NONPARTICIPATING CONTRACTOR SEQUENCE

- X1 Have you heard of the Home Performance with Energy Star Program?

Yes 1
No [SKIP TO X9] 2
Don't know [SKIP TO X9] 3

- X2a. Have you or an employee taken a training course offered by the program?

Yes 1
No 2

- Don't know 3
- X2b. Have you or an employee received certification from the program?
- Yes 1
- No 2
- Don't know 3
- X2c. Have you or others in your company attempted to sell the home inspection services for which the program provides training?
- Yes 1
- No **[SKIP TO X9]** 2
- Don't know **[SKIP TO X9]** 3
- X3 How many inspections have you been able to sell?
- ENTER NUMBER _____
- X4 How many inspections have you attempted to sell?
- ENTER NUMBER _____
- X5 What sales approaches or messages appear to be working for you?
- _____
- _____
- X6 What sales challenges or objections do you encounter most frequently?
- _____
- _____
- X7 Do you plan to continue selling inspection-driven home improvement services?
- Yes **[SKIP TO X9]** 1
- No 2
- Don't know 3

X8 Why not?

X9 The Home Performance with Energy Star Proposal provides incentives to builders to carry out home improvements that reduce energy use for heating and hot water while addressing problems associated with poor insulation or air sealing, such as indoor air quality, mold, and ice dams. The program offers:

- Training and certification in building diagnostics and energy savings estimation;
- Support in developing reports and proposals to the homeowner;
- Incentives of \$100 per home for qualifying improvements;
- Marketing support via materials and campaigns developed by EVT.

Would you be interested in participating in such a program?

Yes 1
 No [**SKIP TO X11**] 2
 Maybe [**SKIP TO X12**] 3
 Don't know [**SKIP TO X12**] 4

X10 IF X9 = Yes, ASK: What benefits do you think this kind of program would provide for your company?

X11 Why is that?

THANK AND TERMINATE

X12 What information would you need to assess whether you are interested in participating in the program?

CLOSE.

Those are all the questions I have for you today. Thank you for your time and cooperation.
 May I verify your address for the drawing?

Name:

Street:

City:

State:

ZIP:

Phone:

THANK YOU FOR YOUR TIME AND COOPERATION